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Report to the Chairman and Ranking Minority Member, Subcommittee on Readiness, Committee on Armed Services, U.S. Senate

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MILITARY PREPOSITIONING

Army and Air Force Programs Need to Be Reassessed

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The Honorable James M. Inhofe
Chairman, Subcommittee on Readiness
Committee on Armed Services
United States Senate

The Honorable Charles Robb
Ranking Minority Member
Subcommittee on Readiness
Committee on Armed Services
United States Senate

This report responds to your request that we review the readiness of Department of Defense (DOD) prepositioning programs. Specifically, we examined (1) the basis for the program requirements and (2) the rates of inventory fill and maintenance condition of prepositioned stocks and the reliability of this readiness data.

We are sending copies of this report to the Secretaries of Defense, the Army, the Navy, and the Air Force and to the Commandant of the Marine Corps. We will also make copies available to others upon request.

Please contact me at (202) 512-5140 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix II.

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Executive Summary

Purpose

The U.S. military stores, or prepositions, reserves of military equipment and supplies near potential conflict areas to ensure that the material would be quickly available to forces in the event of a crisis. During a crisis, prepositioning would speed U.S. response times because only the troops and a relatively small amount of materiel would need to be brought by air to the conflict area. As a result, the Department of Defense (DOD) could field heavily equipped, combat-ready forces in days rather than the weeks it would take if the forces and all necessary equipment and supplies had to be brought from the United States. Collectively, the services spent over $1 billion in fiscal year 1997 to operate and maintain their prepositioning programs.

The Chairman, Subcommittee on Readiness, Committee on Armed Services, U. S. Senate, asked GAO to assess the readiness of prepositioning programs. Specifically, GAO examined (1) the basis for program requirements and (2) the rates of inventory fill and maintenance condition of prepositioned stocks and the reliability of this readiness data. GAO focused its review on the Army and the Air Force programs because of concerns that emerged about the sufficiency, condition, and management of their prepositioned stocks. Information on the Marine Corps and the Navy programs is in appendix I.

Background

While the prepositioning concept is not new, it has gained importance in the post-Cold War world. With fewer troops forward stationed today, prepositioning has become increasingly important because it allows DOD to project forces into conflict areas faster. It can lessen the strain on scarce airlift capabilities and reduce reliance on relatively slow sealift deliveries. Consistent with the two-war strategy adopted during the 1993 Bottom-Up Review, DOD has expanded prepositioning efforts in Korea and the Persian Gulf. Military planners in both these regions foresee heavy reliance on prepositioned stocks during the first days of conflict and believe that such stocks are an important deterrent to potential aggression.

The Army has given priority to its seven combat brigade sets, each of which provides prepositioned combat and support equipment for 3,000 to 5,000 soldiers. The Army prepositions three sets in Europe. The other four sets are prepositioned in Kuwait, Korea, Qatar, and aboard a fleet of ships. Other Army prepositioning efforts include operational projects and sustainment stocks stored ashore worldwide and on ships. The operational projects program is intended to provide stocks for special missions. This program contains a range of support equipment and

supplies, from fuel pipelines and bridges to clothing and chemical gear. The sustainment program is intended to provide battlefield replacement equipment, food, fuel, ammunition, and other consumable supplies to support a theater until resupply is established. Other Army stocks include ammunition in Korea, Thailand, and Israel as well as artillery equipment and ammunition in Norway. The Air Force prepositions "bare base" sets in the Persian Gulf, Korea, and Europe, which include items such as tents, kitchens, and hangars to create or augment an air base. This program is critical to the Air Force because the sets support early arriving combat forces and are especially critical in austere environments, such as the Persian Gulf, where they would provide the bulk of living and working facilities at many planned operating locations. The Air Force also has programs for vehicles, munitions, and other supplies. The worldwide vehicle program includes both general purpose vehicles, such as trucks and buses, and special purpose vehicles, such as materiel handling and fire-fighting equipment. The Air Force prepositions munitions in land facilities and afloat, on three ships. In addition, the Air Force stores other items, such as aircraft fuel tanks and pylons, refueling equipment, and medical sets and supplies, at land facilities worldwide.

In measuring readiness, military managers told us that they use two primary criteria: inventory fill and maintenance condition. Stocks on hand are compared against required levels to assess inventory fill; thus, requirements must be valid to achieve a reliable, objective assessment. Maintenance condition describes whether on-hand items work well enough to perform their mission. If on-hand stocks are not what is needed—or are in poor condition—the purpose of prepositioning may be defeated because the deploying unit will lose valuable time repairing or replacing equipment.

Results in Brief

The Army and the Air Force have poorly defined, outdated, or otherwise questionable requirements in the major programs that GAO reviewed. The Army and the Air Force have reported significant shortages and poor maintenance conditions in their prepositioning programs. In some cases, however, reliable data to assess inventory fill and maintenance condition was unavailable. Thus, the precise readiness of the prepositioned stocks—and the impact of any shortfalls—is difficult to determine because of the questionable requirements that underpin the programs and the poor information that the services use to manage the programs. While the services are taking steps to address the requirements and reporting

problems, it may be several years before these problems are resolved and readiness can be reliably assessed.

The positioning of the Army's brigade sets in Kuwait, Qatar, Korea, and afloat supports the current two-war strategy. The three brigade sets in Europe are in a state of flux, and the Army recognizes the need to revisit and evaluate the requirements for those sets. Despite questions about the overall brigade set requirements, GAO was able to assess the readiness of individual sets because the Army periodically reports on the readiness of these sets. The Kuwait set is at a high level of readiness, and the sets afloat, in Korea, and in Qatar are improving as additional equipment is added to these sets. The readiness of the European sets is declining, however, and the Army has no immediate plans to fill equipment shortages caused by the transfer of equipment to units in, or returning from, Bosnia. The Army has not determined valid requirements for its operational projects and sustainment programs. The Army is reviewing these programs to establish requirements, but these reviews had not been completed at the time GAO completed its work. Furthermore, the Army has unreliable or incomplete data to manage the programs and assess their readiness. Until the Army establishes valid requirements for these programs and improves inventory reporting, their readiness cannot be reliably and comprehensively assessed.

Similarly, the Air Force has not determined precise requirements for its bare base and vehicle programs. In the Persian Gulf, the Air Force has not completed the detailed planning at each of its planned operating locations to determine what infrastructure and vehicles would be available to deploying forces. Thus, current requirements are outdated, based on a worst-case scenario that assumes the Air Force must provide virtually all the facilities and vehicles it would need should a major war occur. In Europe, the Air Force is storing over 900 vehicles but has no current requirements for the vehicles to be stored there. The Air Force reported significant shortfalls in its prepositioning programs, and GAO found equipment in poor condition. The most significant shortfall reported by the Air Force is in the Persian Gulf bare base program; the program has less than one-third of the sets that the Air Force projects it would need for a major war there. In the vehicle program, the Air Force does not have reliable, comprehensive reports of inventories on hand or their maintenance condition. At one location visited, GAO found that over 40 percent of the Air Force's aging vehicles were in poor condition and would require repair before being used. Until the Air Force determines requirements for these programs and improves reporting, however, the

impact of shortfalls and poor maintenance conditions will be difficult to discern.

Principal Findings

Requirements for Brigade Sets in Europe Are Questionable, and Capabilities Among All Sets Vary

The Army's positioning of brigade sets in Kuwait, Qatar, Korea, and afloat reflects DOD's current two-war strategy. However, the requirements for the three brigade sets in Europe are questionable. GAO found wide variations in the readiness of the individual brigade sets. Specifically, in the Persian Gulf, the brigade set in Kuwait has most of its required equipment, and this equipment is in good condition. This set has certain readiness advantages over the other sets. For example, the Kuwait equipment is kept ready to be issued with only a few hours of notice; the other brigade sets are kept in storage. Also, the U.S. Central Command has a recurring exercise program in which a battalion of soldiers—about one-third of the combat brigade—performs exercises with this equipment, resulting in well-defined procedures for drawing the equipment. Kuwait pays most of the approximately $60 million annual cost of this program.

The three brigade sets established or expanded since the adoption of the two-war strategy in Korea, Qatar, and on ships are improving steadily. According to the Army, the sets in Korea and Qatar should both reach acceptable inventory and maintenance condition levels before the end of 1999, except for repair parts. The Korea set is already over 90 percent complete. However, it has not been exercised and still has shortfalls of support equipment and spare parts. As a result, the Commander in Chief, U.S. Forces, Korea, has said that this set is "not fightable." In Qatar, the brigade set is awaiting the completion of new facilities currently under construction. The Army has stored two battalions of combat equipment (about two-thirds of the combat capability of the brigade) in controlled-humidity storage bags and tunnels to protect it from extreme desert conditions while new facilities are completed. This brigade set is not combat ready primarily due to shortages of critical equipment. In addition, the desert heat has ruined many of the batteries in the equipment being stored. These batteries would need to be replaced at the onset of a contingency.

Among its combat brigade sets, the Army views the afloat set as its most important due to its ability to quickly deploy to any conflict area.

However, GAO reported in July 1997 that critical stock items aboard prepositioning ships were missing and that some equipment was originally loaded in poor condition. The afloat stocks have since been improving as the equipment aboard the ships is taken off, repaired, and reloaded in good condition. By the fall of 1998 all original brigade set equipment will have been repaired and reloaded on new ships.

The combat capability of the three brigade sets remaining in Europe is declining, and the need to retain three brigade sets there is questionable. The Army recognizes a need to examine whether the brigades are needed to fill a current war-fighting requirement and whether authorizations for the brigades should be maintained. Each set in Europe has shortfalls resulting from transfers of equipment to U.S. forces in, or returning from, Bosnia. Portions of the sets have been issued in response to requests for individual items to support the contingency in Bosnia and exercises. However, the Army has no immediate plans to fill the shortages that have resulted from these equipment issues. Overall, Army officials have concluded that the shortfalls would not critically affect the war-fighting efforts in Korea or the Persian Gulf because the sets in Europe would likely be used later than those positioned nearer to potential conflict areas.

Army Operational Projects and Sustainment Programs Cannot Be Reliably Assessed

The capabilities of the Army's operational projects and sustainment programs cannot be reliably evaluated because the Army does not have valid requirements or reliable reports of inventory levels and maintenance conditions for these programs. While the Army acknowledges these problems and is now focusing attention on them, the programs have received low priority compared to the brigade set program. In addition, while the status of the Army's brigade sets is reported quarterly under the unit status reporting system, operational projects and sustainment stocks are not reported under this, or any, reliable reporting system. Despite their lower priority, these programs can be critical during a war because they include items like petroleum and water distribution systems, chemical defensive equipment, and repair parts that may be needed to keep combat equipment operational.

The Army is taking steps to correct its requirements problems, but these efforts may not produce valid requirements. An aircraft matting project, which includes metal mats used to construct airfields, accounts for over 83 percent of the Army's total operational projects requirements and 87 percent of its reported shortfall, according to Army Materiel Command

figures. The Army reported that this $10.3 billion project has been completely revalidated. However, the requirements for this project are questionable because (1) about 70 percent of the worldwide requirement for aircraft matting is designated to support contingencies in Europe and Africa, not the major theater wars in Korea or the Persian Gulf and (2) the Army could provide no documentation to indicate that the war fighters in Europe had analyzed or otherwise validated this requirement. While the Army allows approval of operational projects to support regional contingency plans, DOD has directed the services to size their programs to meet the demands of the two-war strategy.

Even if the Army develops its requirements, it will still face considerable reporting problems because it does not have reliable information on inventory and maintenance condition. GAO found discrepancies amounting to billions of dollars between the data from the Total Asset Visibility system—the Army's system for tracking operational projects and sustainment stocks—and the stocks actually on hand. The Total Asset Visibility summary reports do not include condition code data, and they record on-hand stocks only by dollar value or tons.

Poorly Defined Requirements Make Assessment of Air Force Prepositioning Programs Difficult

The most pressing concern in the Air Force's bare base and vehicle programs is the lack of valid requirements underpinning the programs. Without this foundation, it is impossible to reliably assess the impact of reported shortfalls or equipment in poor maintenance condition, and as a result, the Air Force cannot assess the overall readiness of the programs.

The bare base program, which includes such items as tents, portable kitchens, and aircraft hangars, provides temporary living and working facilities. But requirements for this program have remained constant since the late 1980s, and GAO found that the Air Force had not thoroughly reviewed the requirements since the level was set. Such reviews, called base support plans, would include an assessment of the infrastructure available in the region, such as housing and food and laundry sources. These plans must be developed to determine true requirements. Without these, the Air Force tends to assume a worst-case scenario for which it must provide facilities for virtually all deployed forces. As of August 1998, none of the base support plans for operating locations in the Gulf had been finished.

Notwithstanding the outdated requirements, the Air Force and U.S. Central Command are concerned about the shortfalls in the Persian Gulf

bare base sets. In August 1998, when the Air Force measured the sets against its requirements it had less than one-third of the sets (29 of 93) it would reportedly need should a major conflict erupt in the Gulf. Some Air Force officials are concerned that these shortfalls would negatively affect the ability to project forces for a major war in the Gulf. Shortfalls have worsened because these sets have been used heavily since the Gulf War, and the Air Force's efforts to rebuild the sets have not kept pace. However, these significant shortfalls are not insurmountable, according to the Air Force, because personnel can be housed in barracks or hotels if bare base facilities are not available. Forces may not be as well-protected in such locations, however, and force protection concerns are paramount in the region since the 1996 Khobar Towers bombing in Saudi Arabia.

Requirements have not been precisely determined for the vehicle program in the Gulf region. The Air Force was working to develop vehicle requirements during GAO's review, but as of October 1998, the Air Force had not determined how many vehicles it would be able to obtain from host nation sources. In addition, the Air Force is storing over 900 vehicles in Europe but has no current requirements for these vehicles.

In addition, the Air Force has little reliable data with which to measure the readiness of its vehicle program. Readiness is not routinely reported, and the Air Force could not tell us precisely how many prepositioned vehicles it had on hand worldwide or what condition these vehicles were in. However, many of the vehicles at major storage locations worldwide are aging and a high number are not mission capable. For example, over 40 percent of the vehicles at a major location in the Persian Gulf were not mission capable as of July 1998.

Recommendations

GAO recommends that the Secretary of Defense direct the Secretaries of the Army and the Air Force to reassess their prepositioning programs, with the goal of establishing sound requirements based on the prevailing wartime strategy, and to develop reliable inventory information to measure the readiness of the programs. GAO specifically recommends that the services determine, reevaluate, prioritize, or improve requirements for European prepositioning; the Army's operational projects and sustainment stock programs; and the Air Force's vehicle and Persian Gulf bare base programs. GAO also recommends that the services develop reliable reports of inventory fill and maintenance condition for the Army's operational project and sustainment stock programs and for the Air Force's vehicle program. Finally, GAO recommends that the Air Force maintain its required

vehicles in good condition and that the services dispose of unneeded prepositioned stocks.

Matter for Congressional Consideration

To reliably assess DOD's readiness status and evaluate its future budget requests, the Congress may wish to consider having the Secretary of Defense periodically report on the (1) progress by the Army and the Air Force to address the requirements and reporting recommendations made in this report and (2) impact of any shortfalls that remain after requirements and reporting problems are addressed, including how DOD and the services would mitigate these shortfalls in the event of a major conflict.

Agency Comments

In commenting on a draft of this report, DOD concurred with the report's recommendations and agreed that Army and Air Force prepositioning programs need to be reviewed with an emphasis on validating requirements based on a two-war strategy, streamlining maintenance, and improving readiness. DOD stated that the Joint Staff and the respective services are examining many of the issues raised in this report. Specifically, the Army is (1) reviewing its prepositioning requirements for Europe to assess whether, in light of projected missions, European stocks should be configured in brigade sets; (2) refining its sustainment requirements with the intent of redistributing or disposing of any excess war reserve stocks; and (3) resolving data accuracy problems for its operational project and sustainment programs to assist in management and readiness assessments.

DOD said that the Air Force plans to complete its ongoing war reserve materiel study within a year. This study is expected to verify and validate European prepositioning requirements, develop base support plans for Southwest Asia, and address vehicle requirements determination problems. DOD also said that the Air Force would redistribute or dispose of any excess vehicles identified through its reassessment of this program.

DOD disagreed that it had not updated its bare base requirements since the late 1980s, commenting that the Air Force reviews and modifies these requirements biennially in conjunction with updates of operational plans. However, GAO notes that although the Air Force has reviewed overall troop deployment levels, it has not developed base support plans as part of these reviews. Such analysis is needed to arrive at precise bare base requirements.

DOD's comments appear in their entirety in appendix II. DOD also provided technical comments, which GAO has incorporated as appropriate.

Contents

Tables

Figures

Abbreviations

DOD	Department of Defense
GPRA	Government Performance and Review Act

Introduction

To help respond quickly to crises overseas, the military services store, or preposition, military equipment and supplies on land and on ships near potential conflict areas. With these stocks prepositioned near danger spots, U.S. response times to a crisis are shortened, since only the troops and a relatively modest amount of materiel must be brought by air to an area where the stocks are located. With fewer troops stationed abroad today, prepositioning has become increasingly important. All four military services have programs to preposition a broad range of stocks to be used for various purposes. Some stocks are positioned afloat, which allows responsiveness nearly anywhere in the world, and other stocks are stored ashore near the likely areas of conflict in the Persian Gulf and Korea. This report focuses on the Army and Air Force prepositioning programs because of concerns that emerged about the sufficiency, condition, and management of their prepositioned stocks. The Navy and Marine Corps prepositioning programs are discussed in appendix I.

Prepositioned Materiel Helps Speed Response to Crises

The goal of prepositioning programs is to make military equipment and supplies available to deploying forces faster than would otherwise be possible. The U.S. military can deliver equipment and supplies in three ways: by air, by sea, or by prepositioning. While airplanes travel quickly, they are expensive to use and impractical for moving all the materiel needed for a large-scale deployment. And though ships can carry large loads, they are slow. Prepositioning lessens the strain of using expensive airlift and reduces reliance on relatively slow sealift deliveries. In its 1997 Annual Report to the President and the Congress, DOD noted that moving an Army brigade of soldiers and 20,000 tons of equipment from the United States to the conflict area (by sea and air) would take 20 to 30 days. By contrast, fully deploying a prepositioned brigade should take just 4 days because only the soldiers, with a small amount of equipment, would be flown to the location of the prepositioned stocks.

Although the concept of prepositioning is not new, it has gained importance in the post-Cold War world. Since its 1993 Bottom-Up Review, DOD has focused on maintaining capabilities to fight and win major conflicts in the Persian Gulf region and on the Korean peninsula. Concerned about the reduction in U.S. forces overseas and their ability to move forces in the time required to resolve potential conflicts quickly, the services have expanded prepositioning ashore and on ships in those regions. In the Persian Gulf, where the United States has few permanent forces, prepositioned stocks would be the primary source of combat equipment for ground troops and would be critical in setting up air bases

there. In Korea, the Army has prepositioned a brigade set to augment the combat capabilities of U.S. forces there.

While prepositioning figured prominently in the previous mobility studies performed by DOD, the Quadrennial Defense Review completed in 1997 did not consider prepositioning as a major part of its scope. Instead, DOD officials told us that prepositioning was to be reconsidered as part of the planned update to the mobility studies, scheduled to begin in 1999.

The services generally measure the readiness of prepositioned stocks by determining their inventory fill and maintenance condition—that is, do they have the required stocks on hand and are those stocks in condition to fulfill the mission. To assess inventory fill, the rate of fill is compared to the requirements. These requirements must be valid to achieve a reliable objective assessment. To assess both inventory levels and maintenance condition, the services must have reliable information about the on-hand stocks and their current condition. Other factors affecting the readiness of the prepositioned stocks are their location, that is, are they close to where they are needed, and the training of the units to use them. Unless required stocks are available and in good condition, the purpose of prepositioning may be defeated because the deploying unit will lose valuable time repairing or replacing equipment.

To provide a context within which to assess the services' programs, we used the Government Performance and Results Act of 1993 (GPRA), which suggests that agencies working toward results-oriented management should take three steps, including (1) defining their mission and identifying desired outcomes; (2) measuring performance; and (3) using performance information to improve organizational processes, identify gaps, and set goals for improvement.

We have published several reports about prepositioning, including three in 1997 about various aspects of the Army's program.[1] A list of related reports by GAO and other organizations is at the end of this report.

[1]Afloat Prepositioning: Not All Equipment Meets the Army's Readiness Goal (GAO/NSIAD-97-169, July 23, 1997); Strategic Mobility: Late Deliveries of Large Medium Speed Roll-on/Roll-Off Ships (GAO/NSIAD-97-150, June 16, 1997); and Army War Reserves: DOD Could Save Millions by Aligning Resources With the Reduced European Mission (GAO/NSIAD-97-158, July 11, 1998).

The Army's Prepositioning Program

The Army prepositions materiel for three primary programs: prepositioned equipment sets, operational projects, and sustainment stocks. This materiel ranges from Abrams tanks to cold weather clothing. In 1992, the Army shifted responsibility for managing these stocks, except for medical items, from its theater commanders to the Army Materiel Command. The purpose of the shift was to establish a common stockpile of equipment to support worldwide requirements. According to the Army, the budget for operating and maintaining its prepositioning programs in fiscal year 1997 was about $536 million.

Prepositioned Equipment Sets

The Army's goal for prepositioning is to establish eight brigade sets, seven of which are fully or partially in place. Each brigade set contains tanks, Bradley fighting vehicles, artillery pieces, trucks, and other rolling stock to support three or four battalions of Army combat troops, or about 3,000 to 5,000 soldiers. A support battalion is placed with each brigade set to maintain it and provide other critical support unit equipment. In addition to the brigade sets, the Army also has a division base set planned for Southwest Asia, which would provide support equipment for aviation and other equipment, and an artillery battalion and ammunition in Norway.

Of the seven established brigade sets, six are ashore and one is afloat. Three of the six ashore are in Europe; the other three are in Kuwait, Qatar, and Korea. The brigade set afloat is being placed on a fleet of ships being bought for prepositioning purposes. The eighth brigade set, approved in mid-1998 by DOD, is to be placed afloat in 2001. This brigade set will be smaller than the others and is designed to complement equipment already afloat. Table 1.1 shows the location of and major combat systems in each brigade set.

Table 1.1: Army Brigade Sets, by Region, and Their Authorized Major Combat Systems

Region	Location	Abrams tanks	155 mm self-propelled howitzers	Bradley fighting vehicles M2A2s
Persian Gulf	Kuwait	116	18	58
	Qatar	116	18	58
Pacific	Korea	116	18	68
Europe	Netherlands, Belgium, and Luxembourg (2 sets)	232	36	116
	Italy	116	18	124
Afloat	Split between Guam/Saipan, Diego Garcia, and the Persian Gulf	123	18	116
Total		**819**	**126**	**540**

Source: U.S. Army Materiel Command.

Operational Projects

Operational projects provide equipment and other items for specific missions. Prepositioned materiel for these projects includes equipment and supplies that are not usually maintained by units. For example, some projects provide petroleum distribution and water systems, aircraft landing mats, and bridges. Projects can contain a single type of materiel, such as aircraft landing mats, or hundreds of different items such as hot and cold weather clothing. Of the 15 operational projects authorized, 10 are prepositioned on ships or outside the United States. These projects are lower in priority for funding than the prepositioned brigade sets.

Sustainment Stocks

Sustainment stocks are intended to provide consumable supplies and support troops by repairing and replacing equipment that is damaged or lost during a conflict until resupply lines are opened. They include items from almost all classes of supply, including meals, clothing, petroleum, barbed wire, ammunition, tanks, trucks, medical supplies, and repair parts. Major items such as tanks and trucks are authorized only to support operational plans for the Persian Gulf and Korea. Other stocks are stored afloat and on land and can be used to support any scenario. These stocks are among the lowest in priority for prepositioning funding.

Other Prepositioned Army Stocks

The Army owns and controls reserve materiel that is excess to U.S. needs and may be turned over to allies during a crisis. This materiel is located primarily in Korea, Israel, and Thailand. Initiated in 1972, the materiel in

Korea now includes over 550,000 short tons of ammunition and some older equipment that would normally be disposed of through foreign military sales or other means. The materiel in Thailand and Israel consists primarily of ammunition, but in much smaller amounts than that in Korea.

The Air Force's Prepositioning Program

The Air Force prepositioning program includes bare base sets; vehicles; munitions; and a variety of consumable stocks such as rations, fuel support equipment, aircraft accessories, and medical supplies. These programs are to initiate and maintain flight operations until supply channels can be established. The prepositioning programs of the Air Force are managed regionally. According to the Air Force, the budget for operating and maintaining these programs in fiscal year 1997 was about $72 million.

Bare Base Sets

The Air Force's bare base program comprises air transportable sets of equipment to be used to quickly establish or augment air bases worldwide in support of combat forces and aircraft. Each location must have minimal infrastructure such as usable runways, taxiways, parking areas, and a source of water that can be made drinkable. Equipment in the sets includes tents for troops, latrines, kitchens, aircraft hangars, maintenance shops, generators, and environmental control systems. These sets are especially critical in austere environments, such as the Persian Gulf, where they would provide the bulk of living and working facilities at several planned operating locations. Figure 1.1 shows a bare base facility that is set up in Bahrain.

Figure 1.1: Air Force Bare Base Set in Use in Bahrain

Source: GAO.

The bare base program is authorized 109 prepositioned bare base equipment sets worldwide. The bare base sets designated for the Persian Gulf, called Harvest Falcon, includes 93 sets of prepositioned materiel. The Air Force said that for this program, it requires bare base facilities to house 55,000 personnel and support over 800 aircraft at 15 different locations in the Persian Gulf region. The Air Force established the number of sets in the late 1980s, and it has remained constant since then. The bare base sets designated for Europe and Korea, called Harvest Eagle, includes 8 sets each authorized for Europe and Korea. These sets are designed for more temperate climates, and augment existing base facilities. Each set provides living facilities for 550 personnel.[2]

Vehicles

The Air Force prepositions a wide variety of vehicles worldwide, including general purpose vehicles such as trucks and buses and special purpose vehicles such as materiel-handling and fire-fighting vehicles. These vehicles, particularly special purpose vehicles, are critical to the Air Force's ability to generate combat sorties and sustain flight operations. Requirements for the program are established based on the number of

[2]This does not include 12 sets for Harvest Falcon and 8 for Harvest Eagle, which are authorized for storage at Holloman Air Force Base, New Mexico, because they are not prepositioned.

aircraft and personnel that will be deployed to each operating location. To establish the requirement, the Air Force reviews the operational plan for each location and calculates how many vehicles would be needed to support the plan. According to Air Force guidance, this requirement is then to be reduced by the number of vehicles that the Air Force can obtain from the host nation or through local purchases. Funding for the vehicles program has in recent years been a low priority, and the Air Force has been operating with some equipment that was purchased during the Cold War.

Other Prepositioned Air Force Stocks

The Air Force prepositions a wide variety of other materiel at different locations worldwide. This materiel includes fuels; rations; medical equipment; and expendable aircraft equipment such as fuel tanks, racks, adapters, and pylons.

The Air Force also prepositions munitions on land and on three ships, where it can provide maximum flexibility to support the two-war scenario—in the Persian Gulf and Korea. Two of the ships are located in the Indian Ocean; the other is in the Mediterranean Sea. The Air Force used some of these stocks during Operation Desert Storm to support its requirements. In 1996, DOD's Inspector General found that the Air Force munitions afloat program was well managed.[3]

Objectives, Scope, and Methodology

At the request of the Chairman, Subcommittee on Readiness, Senate Committee on Armed Services, we assessed the readiness of prepositioning programs. Specifically, we examined (1) the basis for program requirements and (2) the rates of inventory fill and maintenance condition of prepositioned stocks and the reliability of this readiness data. Our review included the prepositioning programs of the Army, the Navy, the Air Force, and the Marine Corps. We concentrated our efforts on the Army's brigade set, operational projects, and sustainment programs and the Air Force's bare base and vehicle programs because of concerns that emerged about the sufficiency, condition, and management of these programs. We describe the Navy and the Marine Corps prepositioning programs in appendix I. We gathered information on, but did not review, the programs of the Defense Logistics Agency, which manages food and bulk fuel to meet requirements of the services.

[3]Equipment Pre-positioned Afloat, Department of Defense Inspector General (97-054, Dec. 20, 1996).

To determine the basis for program requirements, we reviewed requirements documents and processes for each program to see whether they reflected current war-fighting needs and were based on sound analysis. We discussed the validity of program requirements with officials from the services and the unified commanders and obtained the results of recent or ongoing reviews of requirements. We reviewed the results of the Bottom-Up Review, the Quadrennial Defense Review, and recent mobility studies to determine the basis for the brigade sets, and we discussed the need for the European brigade sets with officials from the Army, Joint Staff, and U.S. European Command. For the Army's operational projects program, we reviewed the documents authorizing each project, if available, and gathered information about the Army's ongoing efforts to revalidate the projects. For the Army's sustainment program, we discussed the models used by the Army to determine requirements and gathered information about the Army's ongoing efforts to improve the inputs to these models. For the Air Force bare base and vehicle program, we reviewed requirements documents and discussed how required levels were determined with cognizant Air Force officials. We reviewed the process the Air Force uses to determine the gross requirements to support operational plans and obtained information about the Air Force's efforts to determine what host nation support will be available at planned operating locations.

To determine the rates of inventory fill, we compared inventory information from service managers to program requirements. To determine the condition of prepositioned material, we reviewed available maintenance reports used by the services to measure condition. We also examined the physical condition of stored materiel in prepositioning sites in Korea, Bahrain, Oman, Qatar, Kuwait, Italy, Belgium, Luxembourg, and the Netherlands. To selectively verify the maintenance condition reported by the services, we reviewed the maintenance records for judgmentally selected pieces of equipment, as well as summary reports, data, and maintenance plans available at the prepositioning sites we visited. We reviewed formal readiness reports from the Status of Resources and Training System, if available, to determine the readiness ratings assigned to the prepositioned stocks. We discussed reporting processes and data reliability with responsible officials in the services and with the unified commanders.

To determine the impact of reported shortfalls and obtain a broad perspective on the readiness of prepositioned stocks, we reviewed joint monthly readiness reports provided by the services and unified

commanders and recent quarterly reports to the Congress. We also interviewed officials of the Central Command, the European Command, the Pacific Command, and U.S. Forces, Korea to obtain their views regarding the sufficiency of prepositioned stocks to execute operational plans. We did not do a detailed assessment of medical stocks or munitions.

We obtained information, documents, and perspectives from headquarters officials in the Office of the Secretary of Defense, the Joint Staff, and the four services. We obtained information from Army officials at the following locations:

- the U.S. Army Materiel Command;
- the U.S. Army War Reserve Support Command and its subordinate commands in the Netherlands, Korea, Qatar, and Charleston, South Carolina;
- the Army Materiel Support Analysis Activity;
- the U.S. Army, Central Command;
- the U.S. Army, Pacific Command; and
- the Eighth U.S. Army and selected subordinate commands in Korea.

We obtained information from Air Force officials at the following locations:

- the Air Combat Command;
- the U.S. Air Force, Central Command;
- the U.S. Air Forces in Europe; and
- the U.S. Air Force, Pacific Command, and its subordinate command in Korea.

We obtained information from Navy officials at the Naval Facilities Engineering Command, the Military Sealift Command, and the Naval Supply Command Fleet Hospital Program Organization. We also obtained information from Headquarters Marine Corps officials.

To provide a context within which to assess the services' programs, we used the Government Performance and Results Act of 1993 (GPRA), which suggests that agencies working toward results-oriented management should take three steps, including (1) defining their mission and identifying desired outcomes; (2) measuring performance; and (3) using performance information to improve organizational processes, identify gaps, and set goals for improvement. These steps are suggested in our

Executive Guide: Effectively Implementing the Government Performance and Results Act (GAO/GGD-96-118, June, 1996).

We built on our past reports and reviewed reports of the Congressional Budget Office, Congressional Research Service, and DOD and service auditors. We discussed these reports with responsible service officials but did not verify the findings of other organizations.

We performed our review between September 1997 and October 1998 in accordance with generally accepted government auditing standards.

Army Prepositioning Programs Are Built on Questionable Requirements, and Some Have Limited Readiness Reporting

The Army has poorly defined, outdated, or otherwise questionable requirements that limited our ability to provide reliable composite readiness assessments for the Army's three major prepositioning programs. Within the Army's high priority brigade set program, overall readiness was difficult to assess due to questions about European brigade set requirements. The Army's brigade sets in Kuwait, Qatar, Korea, and afloat reflect the current two-war strategy, but Army officials have expressed a need to reevaluate the requirements for three brigade sets in Europe. Despite concerns about overall brigade set program requirements, we were able to assess the readiness of the individual sets. The Kuwait set is currently at a high, stable level of readiness. The readiness of the afloat, Korea, and Qatar sets is improving, and despite present shortages these sets could provide a significant combat capability, if needed. Readiness is declining in the European sets, and the Army has no immediate plans to fill equipment shortages caused by the transfer of equipment to support troops in, or returning from, Bosnia.

Army's managers lack the critical information that they need to effectively administer the operational projects and sustainment stock programs. Our readiness assessments of these programs were hindered by both requirements and inventory reporting problems. Requirements for most of the Army's operational projects were outdated, and the Army was working to revalidate the requirements. However, revalidation dates for many projects had slipped, and requirements were still questionable for one project that had been revalidated. Inputs were being updated for one of the Army's sustainment requirement models, but valid requirements were not expected until the spring of 1999. In addition, inventory summary reports for both the operational projects and sustainment stock programs were incomplete or unreliable. The Army has recognized these problems with its programs and has begun taking steps to correct them, but it may be several years before the problems are fully resolved and it can reliably assess the readiness of its prepositioning programs.

Requirements for Brigade Sets in Europe Are Questionable, and Capabilities Among All Sets Vary

The Army's positioning of brigade sets in Kuwait, Qatar, Korea, and afloat reflects DOD's current two-war strategy. However, the requirement for three brigade sets in Europe is questionable. We found wide variations in the readiness of the individual brigade sets, but each is intended to provide a fully outfitted combat brigade within a few days. The readiness of each brigade set reflects the Army's priorities and ranges from high in Kuwait to low in Europe. The high readiness of the brigade set in Kuwait reflects its importance in the Persian Gulf region, whereas the sets in Europe are not

combat ready, reflecting the Army's low priority for those sets. Despite the differences in its sets, the Army has established standard issuance procedures, timelines, maintenance requirements, and readiness reporting requirements to ensure that its brigade sets are available and in good condition. It reports the readiness of these sets through the Status of Resources and Training System. Recently, the Army said that it has insufficient funds to properly maintain the seven brigade sets currently fielded and that as a result maintenance is being deferred and issue times could increase. In addition, the Army noted that it has insufficient funds to properly care for the additional eighth set planned to be put afloat in 2001. We could not validate the Army's statement due to questions about the requirements for the three sets in Europe.

The Brigade Set in Kuwait Is Ready for Combat

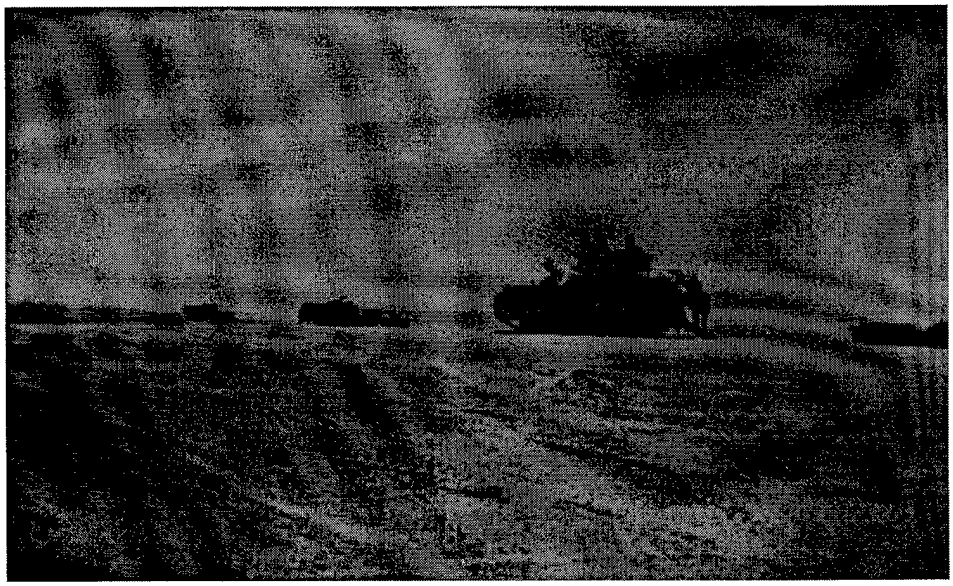
The brigade set in Kuwait has almost all its required equipment and spare parts on hand and maintenance condition levels are high, according to recent Army readiness reports. Thus, this set is at a high level of readiness. Three unique circumstances enhance the readiness of the Kuwait set. First, the Kuwait set is kept ready to be issued with only a few hours notice, and it is never placed in long-term storage like the other sets. Second, exercises that use approximately one-third of the brigade set equipment are conducted on an almost continual basis and result in well-defined procedures for issuing the equipment. Third, the Kuwaiti government pays for most of the costs of this set—approximately $60 million annually, according to Army officials in Kuwait. Kuwait pays for all maintenance and operation costs associated with this set, including lease costs at the storage site, repair part costs, and the salaries of over 700 contractor maintenance personnel and hundreds of other support personnel. The Kuwaiti government has also agreed to pay for extensive military construction projects. The Army pays the vast majority of costs for its other brigade sets.

Recent exercises have confirmed the readiness of the Kuwait brigade set. For example, of the 1,700 pieces of prepositioned equipment issued to Army troops deployed to Kuwait in February 1998, only 4 pieces did not work properly, according to Army and maintenance contractor officials. And in May 1998, additional forces arriving in Kuwait unloaded their planes, drew materiel from the prepositioning site, and moved to the field within 16 hours; one unit made it in about 10 hours.

During our May 1998 visit to Kuwait, unit personnel training with the brigade set told us that the equipment was in good condition when it was

issued to them in February 1998 and that they had maintained 95 percent or more of the equipment in operational condition during each month of their deployment. They also said that the deployment had offered excellent, realistic training opportunities unavailable at their home bases. Figure 2.1 shows soldiers using brigade set equipment for training in Kuwait in May 1998.

Figure 2.1: Unit Training With Army Brigade Set Equipment in Northern Kuwait



Source: GAO.

The Brigade Set Afloat Is Improving as New Ships Are Delivered and Equipment Is Repaired

Until recently, the brigade set on ships lacked equipment, and some of the equipment on hand was in poor condition. However, among its combat brigade sets, the Army views the afloat set as its most important due to its ability to quickly deploy to any conflict area. The Army has been steadily filling equipment shortages and repairing equipment within this set. By the end of 1998 the Army expects the set to have over 99 percent of its principal weapons systems and critical equipment on hand. The set will still have small shortages of some support equipment, but the equipment on hand should remain in good condition. As a result, this set should report a high readiness level by the end of the year.

In 1995, the Army Inspector General reported that maintenance standards had not been enforced when the brigade set equipment was initially loaded on Ready Reserve Force ships.[1] We reported in 1997 that about one-quarter of the set's reportable units were not capable of fully performing their missions according to the Army's standards.[2] Since then, the Army has taken equipment off the Ready Reserve Force ships; repaired, maintained, or replaced the equipment; and then loaded it on large, medium-speed, roll-on, roll-off ships specifically designed to carry prepositioned equipment. In May 1998, the last Ready Reserve Force ship containing brigade set equipment unloaded its cargo. The Army plans to repair or replace this equipment and load it, with additional parts and equipment, onto the U.S. naval ship Watson, a new large, medium-speed, roll-on, roll-off ship. According to Army managers, when the Watson is fully loaded in fall 1998, all of the afloat brigade set equipment will have completed its initial repair cycle, and most major equipment shortages will be filled. However, fill rates for repair parts are expected to remain below 60 percent and will be the largest remaining concern for this brigade set.

Although the brigade set is expected to be fully capable before the end of the year, the five ships carrying the brigade set are just a portion of the Army's afloat prepositioning program. Seven additional ships are currently in the fleet, and the Army plans to eventually use 15 ships to carry prepositioned materiel. The additional ships carry operational projects and sustainment items.

Brigade Set in Korea Is Improving but Concerns Remain

The brigade set in Korea has most of its required equipment, and maintenance conditions are high, according to recent Army readiness reports. Thus, the Army reports that this set is at a high level of readiness. However, the Commander of the U.S. Forces, Korea, described the set as "not fightable" because it has materiel shortages and has never been issued and exercised.

Equipment on hand has increased dramatically in the set, from 8.5 percent in August 1996 to 88 percent in January 1998. Since January, inventory levels have continued to climb, and critical shortages of armored vehicle-launched bridges and fuel trucks have been filled. By the summer of 1998, the Korea brigade set had about 96 percent of its principal weapons systems and critical equipment on hand. However, the set had

[1]Assessment of Army War Reserve Materiel, Department of the Army Inspector General (Oct. 25, 1995).

[2]Afloat Prepositioning: Not All Equipment Meets the Army's Readiness Goal (GAO/NSIAD-97-169, July 23, 1997).

some support equipment shortages and only had about 40 percent of its required repair parts.

Because the Army accelerated filling the brigade by about 18 months, most equipment arrived in Korea before storage facilities were completed or plans were developed for storing, issuing, and maintaining the equipment. In May 1995, the Army completed its first and largest controlled-humidity warehouse for prepositioned equipment in Korea. Two more warehouses were completed in September 1997. These three warehouses were able to hold the brigade set's tracked vehicles. However, many of the set's wheeled vehicles were stored outside for over a year, awaiting the scheduled completion of the final two warehouses in the fall of 1998. Storing vehicles outside results in increased maintenance costs or reduced maintenance conditions because equipment that is exposed to the elements must undergo maintenance every 6 months (versus every 4 years for equipment in controlled humidity warehouses). When the last two warehouses are finished, maintenance personnel will move equipment from outside into the warehouses.

While the Army reports the brigade set in Korea at a high state of readiness, the Commander in Chief of U.S. Forces, Korea, said that he will not consider this set ready to fight until it is as ready as the brigade set in Kuwait. In the fall of 1998, a portion of the set will be issued for the first time for an exercise called Foal Eagle. This exercise should provide the Commander in Chief some measure of the set's capabilities and limitations as well as a measure of the time required to issue the set. An officer from the unit scheduled to use the equipment during Foal Eagle said that he had inspected the equipment and was pleased with the condition of the tracked equipment but was concerned about the condition of the vehicles that had been stored outside.

Army Is Awaiting Construction of New Facilities Before Completing the Qatar Brigade Set

As of August 1998, the Army had not completed the prepositioning of its brigade set in Qatar, and the set still had significant shortages of both equipment and spare parts. According to recent Army readiness reports, maintenance conditions are generally high for equipment on hand, but shortages of major equipment still exist. In addition, dead batteries in some of the on-hand equipment may delay its issuance.

In January 1996, the Army began fielding the Qatar brigade set. It shipped equipment for the first battalion task force to Qatar and placed it in temporary storage facilities. In the fall of 1997, a second battalion task

force was added. These two shipments provided about two-thirds of the combat capability of the brigade, but they did not include the equipment for the forward support battalion, engineer battalion or other support equipment. Consequently, the overall equipment fill rates for the brigade remained low. In March 1998, fill rates declined somewhat when 105 vehicles and 24 other major pieces of equipment were transferred from Qatar to Kuwait to support Operation Desert Thunder. In June 1998, the set's overall fill rate was about 28 percent, and repair parts were filled to about 53 percent.

Although the brigade set is incomplete, Army officials said it could provide some limited combat capability if needed. On hand are 700 vehicles, including 88 Abrams tanks and 98 Bradley fighting vehicles. The next major shipment of equipment, scheduled to arrive in September 1998, includes major equipment for the brigade's forward support battalion as well as repair parts and supplies. According to Army officials, this shipment will increase the overall fill rate for equipment to 38 percent, and the fill rate for repair parts will increase to 69 percent. Additional equipment is scheduled to arrive as facilities are constructed to house the equipment, and the Army plans to have the entire brigade set in Qatar by September 1999.

The Army is constructing facilities to store prepositioned equipment on a 262-acre site outside Doha, Qatar. This three-phase project will eventually provide 2.1 million square feet of storage facilities, consisting mainly of humidity-controlled warehouses, at a cost of $149 million. The first phase of the project, which included six warehouses and a maintenance building, was nearing completion during our visit in June 1998, and the Army expects to begin storing equipment in the warehouses by the fall of 1998.

While warehouse facilities are being constructed, the on-hand equipment for the two battalion task forces is being stored in humidity-controlled bags and tunnels, which protect the equipment and slow deterioration (see fig. 2.2).

Figure 2.2: Bags and Tunnels Used for Temporary Storage of U.S. Army Prepositioned Equipment in Qatar

Source: GAO.

The condition of the equipment stored in bags and tunnels was generally good based on our observations and review of equipment records. However, the bags and tunnels are not air-conditioned, and outside temperatures of 120 degrees and above had caused the batteries in some equipment to fail. According to an Army maintenance official in Qatar, batteries would have to be replaced in at least 75 percent of the first battalion task force equipment before the equipment could be issued. Although Army storage procedures call for the removal of batteries, officials in Qatar were leaving the batteries in the equipment and exploring maintenance alternatives because, they contended, the removal of batteries increases the amount of time necessary to issue the equipment.[3] The Army currently has batteries in storage in Qatar to replace the batteries that have failed.

Despite concerns about the batteries, Army leaders in Qatar said the brigade set could be issued and moved where needed within the time envisioned by current operational plans. However, these officials doubted

[3]Army officials in Korea were also exploring ways to keep batteries in their equipment, but officials in Europe told us they follow procedures and remove the batteries.

that the equipment could be issued within the standard brigade set requirement of 4 days, given its storage conditions and the dead batteries.

Requirements for Brigade Sets in Europe Are Questionable

The Army faces a difficult set of circumstances in Europe. It has used equipment from the three brigade sets in Europe to support operations in Bosnia and other higher priority brigade sets. At the same time, it has considerable potential excesses—over 50,000 pieces of equipment for which it has no identified need anywhere in the Army. To complicate matters, the Army is trying to reduce infrastructure and personnel in Europe. By 2000, after infrastructure is reduced, the budget requirements to operate and maintain the three brigade sets in Europe will be about $65 million, of which $48 million is funded. If a major conflict breaks out in Korea or the Persian Gulf region, the European brigade sets are likely to be used much later than those sets on ships or already in the regions.

The European brigade set equipment has been used extensively to support ongoing operations in Bosnia, but the equipment has never been deployed in brigade, or even company, sets. As a result, some senior officials from the Army Materiel Command favor reconfiguring the European brigade sets into stocks tailored for contingencies. U.S. European Command and other Army officials told us that these sets are important as a sign of commitment to allies in the North Atlantic Treaty Organization, but none of these officials could produce a document formalizing this commitment. In our discussions, Army logistics and operations officials told us that they need to reevaluate the requirements for the European brigade sets, but they had not begun any formal process to do so by September 1998.

Readiness of Brigade Sets in Europe Is Low, and No Fix Is Projected

Because the Army has transferred much of its European brigade set equipment to troops in or coming from Bosnia, these sets are no longer capable as brigade sets and have relatively low readiness ratings. The Army has no plans to fill equipment shortages until after the return of equipment from Bosnia, reflecting the relatively low priority given to the sets.

Between the beginning of Operation Joint Endeavor in 1995 and June of 1998, the Army lent over 7,900 pieces of prepositioned equipment to units deployed to Bosnia. This equipment included Abrams tanks, Bradley fighting vehicles, and armored personnel carriers among other items. Although this equipment was hundreds of miles away and its condition was unknown, the Army continued to report the European brigade set readiness as high because Army policy allowed lent equipment to be

reported as if it were on hand and serviceable. However, in 1998, the Army changed its policy and required that equipment be transferred, not lent, to a gaining unit if the equipment was expected to be issued for more than 6 months. One of the reasons the Army changed its policy was that it was losing accountability of the equipment in Bosnia. The Army Audit Agency reported that records did not accurately show the locations and units having physical custody of lent assets valued at about $165 million.[4] When we visited Europe in June 1998, 37 percent of the lent equipment had been returned, but about half of the equipment that was still lent out had not been properly accounted for. Army officials said they would not issue additional equipment until the status of all the lent equipment was resolved, and they expected resolution soon.

The Army expects equipment shortages in the three European brigade sets to increase in the fall of 1998 because equipment is scheduled to be transferred to units in Bosnia and units returning to Germany from Bosnia. The returning units will receive brigade set equipment because they are leaving their equipment in Bosnia for follow-on forces deploying from the United States. The brigade set in Italy will provide much of this equipment, and its inventory levels are projected to drop dramatically by late 1998. The two central region sets are being tapped as well and are also projected to have lower inventory levels by the end of 1998.

Because the Army is issuing European brigade set equipment piece by piece, the sets can have significant shortages of some critical items such as ambulances and little or no shortages of other items. In June 1998, the equipment proposed to be transferred in support of operations in Bosnia included over 16,700 items—62 tracked vehicles, 1,365 wheeled vehicles, 398 trailers, and almost 15,000 pieces of other equipment such as telephones, antennas, and tool kits. Although much of this equipment has and will continue to come from the three brigade sets, some requirements for Bosnia have been met with undesignated equipment that has been located at the European prepositioning sites since the end of Operation Desert Storm and the drawdown of U. S. forces in Europe.

The Maintenance Condition of Prepositioned Stocks Has Been Poor Since the Drawdown in Europe

When the Army Materiel Command became responsible for managing the Army's prepositioned stocks in Europe beginning in 1993, much of the equipment was in poor condition. After the Gulf War and during the rapid drawdown of U.S. forces in Europe, equipment was left in poor condition and transferred "as is" by units departing Europe (see an example in fig. 2.3). A primary mission became repairing the equipment and

[4]Army Prepositioned Stock Program: Combat Equipment Group-Europe (AA 98-138, Mar. 31, 1998).

redistributing it to the brigade sets on ships and in Kuwait, Korea, and Qatar.

Figure 2.3: A High-Mobility, Multipurpose Wheeled Vehicle Left in Poor Condition at a Prepositioning Site in Europe

Source: GAO.

The maintenance condition of some equipment in Europe is still a concern today. For example, when we visited a prepositioning site in Italy in February 1998, recently repaired Abrams tanks were stored outside with very little protection from the weather, even though controlled-humidity storage bags were available (see fig. 2.4).[5] Officials in Italy acknowledged that equipment may suffer significant deterioration as a result of exposure to the weather.[6] Our analysis of their inspection data for several months between January 1997 and January 1998 supported this: inspectors found that roughly 30 percent of the equipment stored outside had problems that would limit the equipment's ability to perform its intended missions. In

[5]When we told Army Materiel Command officials about this, they said they would have the tanks placed in their bags immediately.

[6]The Army sought new facilities for storing this brigade set in the early 1990s, to be funded from North Atlantic Treaty Organization common funds. However, this request has not been approved, and several Army officials expressed doubts that the request would ever be approved in light of the recently announced closures of other prepositioning sites in Europe.

addition, officials from the Combat Equipment Group-Europe told us that virtually all the prepositioning sites in Europe have deferred periodic maintenance on at least some of their equipment to give priority to maintenance and repair of equipment to be redistributed.

Figure 2.4: U.S. Army Abrams Tanks Stored Outside in Livorno, Italy

Source: GAO.

Readiness of Other Army Prepositioning Programs Cannot Be Measured Due to a Lack of Reliable Information

The readiness of the Army's operational projects and sustainment stock programs cannot be reliably measured because managers lack critical information on them, including valid requirements for equipment. In implementing GPRA, agencies must clearly define their goals and objectives and use reliable data to measure performance against those goals and objectives. Because the Army does not have validated requirements for its operational projects and sustainment programs, it does not have objective goals to measure readiness within these programs. The Army is taking steps to revalidate requirements for these programs, but it has not yet finished. Even after the Army develops valid requirements, however, unreliable and missing data concerning inventory fill rates and maintenance conditions will prevent Army managers from measuring the readiness of the operational projects and sustainment programs. The Army recognizes these problems and has begun taking steps to correct them, but

it may be several years before it can reliably assess the readiness of these prepositioning programs.

Operational Projects Program

Revalidation of Operational Projects Requirements Is Not Yet Complete

When the Army centralized management of prepositioned materiel at the Army Materiel Command, 54 worldwide operational projects were consolidated by functional purpose and mission, and the Army now has 15 operational projects. Ten of these projects have all or a portion of their stocks prepositioned on ships or at overseas locations (see table 2.1); the five remaining projects are stored at locations throughout the Continental United States.

Table 2.1: Prepositioned Operational Projects Locations and Equipment

Project	Authorized location	Equipment and supplies
Collective support system	Afloat	Bare base life support items, including food, tents, and water supply and waste disposal equipment; large area maintenance shelters; forklifts; and solar screens
Inland petroleum distribution system	Afloat, Europe and Japan	Equipment to provide forces with petroleum during contingency operations, including pipelines, fuel storage equipment, pump stations, tool kits, and radios
Water supply support	Afloat	Distribution equipment for potable water, including well drillers, water chillers, storage systems, purification equipment, generators, landing craft, and trucks
Port clearance support	Afloat	Equipment to open and support port entries during contingency operations, including cranes, barges, jacks, bridges, trestles, forklifts, and generators
Aircraft matting	Korea and Europe	Landing mats to support construction of airstrips during contingency operations
Receiving and staging materiel	Europe and Korea	Equipment for receiving and staging troops, including tents, beds, cots, field kitchen equipment, generators, and trucks
Bridging materiel	Europe and Japan	Equipment to provide road-building and water-crossing capabilities, including rafts, bridge sets, and trucks
Hot/cold weather clothing	Europe and Korea	Hot/cold weather clothing, chemical defense equipment, coveralls, heaters, field gear, tent repair kits, and battle dress uniforms
Aerial delivery	Europe and Korea	Equipment to air-deliver resupply items to a brigade-sized force, including parachutes, cargo nets, and rail platforms
Medical materiel support	Europe, Persian Gulf, Korea, and Japan	Combat support hospitals, including X-ray apparatus, mobile respirators, operating tables, sterilizers, cots, blankets, tents, and ambulances

Source: Army Materiel Command.

Officials at the Army Materiel Command and the Office of the Deputy Chief of Staff for Logistics have incomplete records documenting the

consolidation of operational projects and could not say whether requirements were reviewed when the projects were consolidated. However, in 1995, an Army Inspector General report described the operational projects requirements as "old and now potentially invalid."[7]

In a 1997 report, the Institute for Defense Analysis criticized the Army requirements, stating that the requirements process appeared to be designed more to build a stockpile requirement than to solve problems or minimize risks.[8] The Institute estimated that requirements for two operational projects were overstated by $280 million. The Army was reviewing requirements for both these projects but had not finished by August 1998.

Army managers are revalidating all operational projects requirements by asking proponents throughout the world to justify projects; the justifications are to be reviewed and approved or disapproved at the Department of the Army staff level. This process was to take place between July 1997 and September 1998. However, by July 31, 1998, the Army had completed revalidations for only 5 of the 15 projects, and revalidation dates had slipped for 7 of the other projects. Under Army regulation, commands must review their projects yearly and completely revalidate their projects, updating equipment lists at least once every 5 years.

Our analysis of the $10.3 billion aircraft matting project, which consists of metal landing mats used to construct airfields, indicates that the Army may not have valid requirements even after completing its project revalidations. The aircraft matting project accounts for 83 percent of the Army's total operational projects requirement of $12.4 billion and 87 percent of the Army's reported $10.4 billion shortage in operational projects. This was one of the five projects reported as completely revalidated in 1998. However, we question the project's requirements for two reasons. First, most of the matting sets (160 of 230) are required to support contingencies in Europe and Africa, not major wars in Korea or the Persian Gulf. While stocks may be used to support regional contingency plans under the Army's policies and procedures, the overarching DOD instruction requires the services to size their prepositioning programs to meet the demand of the two-war strategy. Second, officials responsible for the Army's operational projects could not supply documentation showing that the

[7]Assessment of Army War Reserve Materiel, Department of the Army Inspector General (Oct. 25, 1995).

[8]IDA Review of the Army War Reserve Program, Institute for Defense Analyses (IDA Paper P-3310, Apr. 1997).

combat commanders in Europe had analyzed or otherwise validated this requirement. Based on our analysis of the aircraft matting requirement, the Army has considerable work to do to ensure that requirements are valid, and this may take years.

Reporting System Does Not Accurately Capture Requirements, Inventory Data, or Maintenance Conditions

Although by Army draft regulation operational projects are to be made visible through the Total Asset Visibility database, Army managers cannot use this system to effectively oversee the operational projects program. The system's summary reports do not capture data on the condition of operational projects stocks, the inventory data that is captured is incomplete, and requirements and shortages are quantified only in dollars or in tons. Thus, neither field personnel nor the Army's central managers can use the system to manage operational projects, and they do not know what inventory is on hand or its condition.

In November 1997, the Army Audit Agency reported that Army managers did not generally use the Total Asset Visibility system to manage operational projects stocks.[9] The Agency found that at three locations, asset balances were not properly reported for stocks worth over $390 million. Furthermore, users of the systems said that they could not rely on the system's summary reports to manage operational projects because both requirements and inventory data are unreliable. Our review of system data confirmed the users' statements: we found wide discrepancies between system data and figures provided by the Army Materiel Command. For example, in March 1998, the system showed total operational project authorizations as $1 billion, or only about 8 percent of the $12.4 billion reported by the Command. Likewise, the on-hand inventory for operational projects was only $367 million according to the system but about $1.966 billion according to the Command. Table 2.2 shows the differences between the Command's figures and the figures in the Total Asset Visibility system.

Table 2.2: Comparison of Required Levels and On-Hand Inventory in Army Operational Projects Program

Dollars in millions

Operational projects	Total Asset Visibility System	Army Materiel Command figure	Difference
Required level	$1,020	$12,404	$11,384
On-hand inventory	$367	$1,966	$1,599
Reported shortfall	$653	$10,438	$9,785

Source: March 1998 Total Asset Visibility Report and Army Materiel Command data.

[9]Total Asset Visibility - Operational Projects, U.S. Army Audit Agency (AA 98-31, Nov. 17, 1997).

Another problem with the Total Asset Visibility summary reports is that they list shortages and on-hand quantities in terms of dollars or tons, rather than numbers of items. This type of reporting emphasizes heavy and expensive items. However small, inexpensive items can be just as critical in a war. For example, gas masks, which are relatively light, may be just as or more critical than aircraft landing mats, which weigh over 600,000 pounds per set.

Because the Total Asset Visibility System's summary reports are suspect and the system lacks information of the condition of on-hand assets, the Army's central managers do not have sufficient information to oversee operational projects effectively. One manager told us that requirements for three of the operational projects (petroleum distribution, water distribution, and collective support) are not in the system and must be obtained directly from the program managers. Army procedures require personnel at the operational projects storage locations to provide quarterly reports on the maintenance condition and fill rates of each operational project. However, at the time of our review, reporting had not yet begun.

During our visits to the Army's prepositioning sites, we examined some operational project equipment and supplies. In Belgium, for example, we saw clothing and bridging stocks transfered from a U.S. Army, Europe, facility in Kaiserslautern, Germany. Maintenance personnel at the site were sorting the stocks and repairing them, but they did not have authorization documents and did not know whether the stocks were part of a validated operational project. In Italy, we found operational project stocks such as hot and cold weather clothing, vehicles, tents, and parachutes but no recent authorization documents for them. Site personnel did not know the maintenance condition of the stocks and said they were doing no maintenance on them. In Korea, Command personnel expressed frustration at the poor reporting procedures for the operational projects program and were concerned about shortages in chemical defensive equipment within their operational projects.

Sustainment Stock Program

The Army Has Not Established Credible Requirements but Has Reduced Reported Shortages

The Army could not provide reliable requirements for the sustainment program during our review. The Army is working to resolve requirements problems but has not yet developed valid requirements for sustainment

stocks. Army managers have set a goal to have justifiable requirements for the overall sustainment program by the spring 1999, when they submit the Army's next budget request.

Developing sustainment requirements is complicated and involves two different processes. Using one process and set of computer models, the Army determines requirements for ammunition and major items such as tanks and trucks. Using another process and a different set of computer models, the Army determines requirements for secondary items, including repair parts and other classes of supply. Sustainment stock requirements are further complicated because they rely on inputs from entities outside the Army's control, namely industrial base companies and foreign host nations. If industrial base companies or host nations can produce and deliver equipment and supplies within the Army's required timelines, the Army can reduce the amount of sustainment stocks it is required to hold.

Until recently, the sustainment program received relatively little attention because it was among the Army's lowest funding priorities. However, the Army claimed in 1997 that shortages in secondary items created a significant war-fighting risk. Concerned about this assertion, the Office of the Secretary of Defense brought in outside contractors to analyze the Army's requirements process. In April 1997, the Institute for Defense Analysis reported that the Army's requirements appeared to be significantly overstated because planning factors used in Army models were inappropriate, obsolete, or incorrect. It estimated that industrial base and host nation contributions were understated by almost $1 billion.[10] In 1998, Coopers & Lybrand reported that although the Army had progressed since the Institute's 1997 report, questions remained about model inputs and requirement offsets based on industrial base and host nation capabilities.[11] The report also identified some shortages that were likely to be critical in the early phase of a conflict. These shortages included spare parts for the brigade sets outside Europe and medical items.

Recent Army efforts to refine requirements have reduced the reported war reserve secondary item shortages to $1.8 billion—a significant reduction from the $3.1 billion reported in September 1996. The Army has reworked portions of the process to determine requirements for secondary items, replacing model inputs that were questioned in the two contractors' reports. The Army is also trying to update its industrial base information,

[10]IDA Review of the Army War Reserve Program, Institute for Defense Analyses (IDA Paper P-3310, Apr. 1997).

[11]Army War Reserve Secondary Items, Coopers & Lybrand (Mar. 31, 1998 and June 11, 1998).

but a senior official said that response rates to industrial base surveys are still below 50 percent. The Army disagreed with the contractors' conclusions that host nation support was understated. Army officials contend that guidance from the Office of the Secretary of Defense and the Unified Commanders does not require them to offset sustainment requirements unless a formal, signed host nation support agreement is in place. Host nation support is a known concern, within both the Army and the Department of Defense. In fiscal year 1997, the U.S. Central Command identified the lack of host nation support agreements in the Persian Gulf and host nation support planning as material weaknesses under the reporting requirements of the Federal Managers' Financial Integrity Act of 1982, as amended.[12]

The Army Does Not Have Reliable Data on Sustainment Stocks

The Army could not provide us reliable data on the inventory fill and maintenance condition of sustainment stocks from its reporting systems; therefore, we could not reliably assess what stocks it had or their condition.

As with its operational projects, the Army is trying to use its Total Asset Visibility System to manage sustainment stocks. It uses summary reports generated from the system, but these reports do not include all stocks on hand or provide centralized managers with information about the maintenance condition of stocks. For example, in March 1998, the system showed that for major equipment, the Army had on hand sustainment stocks worth $11,000. However, documentation from U.S. Forces, Korea, showed that its command alone had major equipment sustainment stocks worth almost $50 million. In addition, the Army Audit Agency recently reported that prepositioning sites in Europe had $258 million worth of major equipment that was unneeded in Europe and could be redistributed to offset reported shortages in the sustainment program.[13]

[12]This act requires agencies to report material weaknesses to the President and Congress on an annual basis until the material weaknesses are corrected. (31 U.S.C. 3512(d).)

[13]Sustainment Requirements for the Army Prepositioned Stock Program, U.S. Army Audit Agency (AA 98-99, Feb. 23, 1998).

Air Force Prepositioning Programs Have Poorly Defined Requirements and Incomplete Readiness Information

The Air Force does not have precise requirements established for its prepositioned bare base and vehicle programs. Without this foundation, it is impossible to reliably assess the impact of reported shortfalls and maintenance concerns and, thus, the overall readiness of the programs. The bare base program provides items critical in the Persian Gulf, but requirements for this program have not been thoroughly updated since the late 1980s. Because the Air Force has not assessed the infrastructure available in the region, current requirements are based on worst-case scenarios that assume the Air Force must provide virtually all of the living and operating facilities required by deploying forces and will not have any other sources of supply for housing, food, or laundry requirements. Similarly, the Air Force has not determined the number of vehicles it can obtain from host nation sources, a prerequisite for determining precise requirements. The Air Force is likely overstating requirements, since some host nation facilities and vehicles will probably be available. In addition, the Air Force is storing over 900 general purpose and specialty vehicles in Europe but has no current requirements for these vehicles to be stored there.

The Air Force used bare base sets heavily during the Gulf War and has continued that use since the war; however, its efforts to reconstitute the sets have not kept pace. The Air Force reported in August 1998 that it had less than one-third of the sets it would need if a major conflict erupts in the Gulf. The Air Force and U.S. Central Command have expressed concern about the shortfalls they perceive in the bare base program. In the vehicle program, the Air Force does not require readiness reporting and has little comprehensive readiness data. However, the Air Force's vehicle fleet is aging, and much of it is in poor maintenance condition. We found that significant numbers of the vehicles at major storage locations we visited were not mission capable. The Air Force recognizes that it needs to reevaluate its prepositioning strategy and improve inventory visibility and has begun a broad-based study to accomplish this. The results of this study were not available when we concluded our work, and Air Force officials told us that it will likely take several years to address the many issues facing the program.

Air Force Has Outdated Requirements for Bare Base Program

The Air Force has not precisely defined requirements for the bare base program in the Persian Gulf. Currently, the Air Force plans for a worst-case scenario for which it must provide virtually all of the facilities it will need to operate in the Persian Gulf. Current requirements were set in the late-1980s and have not changed substantially since. Some

infrastructure, such as barracks and operating facilities, are available in the Persian Gulf region.

According to its guidance, the Air Force is required to determine what infrastructure and resources are available at its planned operating locations, a process called base support planning. Base support plans cover virtually all functions required to support an air base. These plans are intended to provide detailed information about air base locations, including overall layout, aircraft parking plans, host nation support, available equipment, and prepositioned assets. The Air Force's plan for addressing shortfalls in the bare base program notes that base support plans "must be completed to determine true requirements." It set June 1997 as a target date for completion of these plans. However, as of August 1998, none of the 18 required base support plans had been completed, though 6 were partially completed, according to U.S. Air Force, Central Command, officials.

These base support plans are essential in determining precise requirements, according to Air Force guidance. With the information from these plans, the Air Force can tailor bare base equipment to meet the needs at each location. Without them, however, planners have assumed a worst-case scenario that may provide too much or the wrong type of capability. Planning for a worst-case scenario may result in significantly overstated requirements. For example, at some planned operating locations in the Gulf, the Air Force has bought commercially available substitutes to replace some Harvest Falcon capabilities, according to program managers. In Bahrain, we saw trailers that were outfitted with showers and laundry equipment (that is, washers and dryers); these semipermanent facilities have been left in place and obviate the need for similar bare base capabilities. In addition, new housing and other facilities are being built at Prince Sultan Air Base in Saudi Arabia.

Air Force officials pointed out that they did not consider base support plans a panacea for determining requirements but acknowledged the need to complete them. Officials told us that their efforts to complete base support plans in the Gulf region had been hampered by access restrictions imposed by host nations. As noted in chapter 2, host nation support is a general concern throughout the Gulf. This concern was demonstrated in fiscal year 1997 when the U.S. Central Command identified host nation support planning as a material weakness under the reporting requirements of the Federal Managers' Financial Integrity Act.

To effectively implement GPRA, a results-oriented organization should determine what its programs are intended to accomplish. The Air Force's bare base program is generally intended to provide housing for personnel and equipment to support flight operations in austere locations. The Air Force mission has changed considerably since the late 1980s, and the Air Force must also consider how it will operate in the future when determining its bare base requirements and configurations. According to U.S. Central Command, the operational plan for the Persian Gulf region is soon to be revised, which may change the Air Force's planned operating locations and thus its bare base requirements. For example, the Air Force plans to use a large new air base being built by the Qatar government. This air base will have many permanent facilities, such as barracks, shops, and hangars, that would normally be taken from bare base stocks, according to the Air Force. Moreover, the bare base sets were configured during the Cold War and do not reflect the Air Force's emerging war-fighting approach, which involves smaller, more customized air expeditionary forces. These forces do not deploy with as many aircraft or personnel and thus may require less support equipment.

Reported Shortages in the Bare Base Program Concern War Fighters

When measured against the Air Force's existing requirements, the bare base program shows significant shortages of equipment, particularly the Harvest Falcon sets designated for the Persian Gulf region. Although the number of on-hand prepositioned bare base sets has improved considerably since 1996, the Air Force has less than one-third (29 of 93) of the sets it currently says are required in the Persian Gulf region for a worst-case scenario. Generally, bare base sets are intended to be stored until needed for a major conflict; however, many have been used for contingencies and exercises, and many equipment items from these sets are being replaced or repaired. Since late 1996, the Air Force has made a concerted effort to increase the number of bare base sets in storage through implementation of its bare base "get well" plan. According to the Air Force, only 2 sets were available in late 1996 when the plan was established, versus 29 sets in storage today. The plan focused on improving on-hand levels through reconsititution and acquisition as well as through revision and enforcement of peacetime use policies, to include consideration of alternative means of supporting peacetime needs. The Department of Defense recently approved an additional $71 million, to be allocated over the next five years, to fix some of the bare base programs immediate shortfalls. The Air Force estimates that it will still take roughly 9 years and cost about $223 million to rebuild the Harvest Falcon sets, assuming that peacetime use is stopped.

Harvest Falcon includes three types of equipment sets: housekeeping (for example, tents, showers, and latrines), used to house and sustain Air Force personnel; industrial operations (for example, utility equipment and civil engineering shop facilities), used to create and sustain air base infrastructure; and flightline (for example, aircraft maintenance shops and hangars), used to support flight operations. In total, the Air Force projects that it needs 93 sets of housekeeping, industrial operations, and flightline equipment to be prepositioned in theater.[1] All three segments of the Harvest Falcon program have significant shortages, as shown in table 3.1.

Table 3.1: Shortages in Harvest Falcon Sets Needed for a Major Conflict in the Persian Gulf (as of Aug. 1998)

Set	Stated requirement	In storage	In use[a] or short
Housekeeping	46	16	30
Industrial operations	13	6	7
Flightline	34	7	27
Total	**93**	**29**	**64**

[a]Sets currently in use could be used if a conflict erupted while the sets were erected. However, most of these sets would require substantial reconstitution before they could be returned to storage. The Air Force currently has about 14 sets in use.

Source: GAO analysis of Air Force data.

The number of sets in storage is somewhat overstated because the Air Force considers a set complete if missing components can be airlifted to the region. For example, the Air Force has counted 16 housekeeping sets in storage as complete, even though water distribution systems—an essential housekeeping capability, particularly in the arid Gulf region—are reported to be stored in the United States. Some Air Force officials questioned whether the airlift needed to move these systems to the region would be available during the initial phases of a large-scale conflict. If not, bare base operations could be delayed significantly. Other critical systems such as airfield lighting systems and runway repair kits are also in short supply and would either need to be airlifted or bought locally.

The U.S. Central Command has raised concerns about these shortfalls in the Joint Monthly Readiness Review, a monthly report in which the command assesses its preparedness. Central Command views bare base shortages as a predominant prepositioning concern in the theater. These

[1]The Air Force determined that an additional 12 sets are to be stored at Holloman Air Force Base, New Mexico. These sets are intended for use in the Persian Gulf region but are not prepositioned.

concerns have been mentioned in the Quarterly Readiness Report to the Congress, a process that we reported on earlier this year.[2]

The impact of these reported shortages proved difficult to pinpoint. Although of concern to the combat commanders, these shortages are not viewed as insurmountable because alternate means for housing personnel may be available. According to Air Force and U.S. Central Command officials, shortages would likely force the Air Force to house personnel outside of bare base facilities, raising force protection concerns. Since the 1996 terrorist bombing in Khobar Towers in Dhahran, Saudi Arabia force protection issues have been a paramount concern in the region. Without sufficient bare base equipment, airmen could be housed at host nation facilities (for example hotels, barracks, and apartments), rather than at bare base locations where special security precautions can be provided. The Air Force and U.S. Central Command could not be specific about the impact of the shortages mainly because base support plans have not been completed to determine what infrastructure is available, and they have no plan to mitigate the impact of these shortages should a large-scale contingency arise.

Although shortages also exist in the Harvest Eagle program, the Air Force does not consider these to be as severe as the shortfalls in the Harvest Falcon program. The Harvest Eagle program is authorized 16 prepositioned sets to be split equally in Korea and Europe.[3] In Europe, three of eight sets are not mission capable. However, these shortages do not have a severe impact, according to the Air Force, because the European sets would likely be used much later in a major conflict than the sets located in Korea or the Persian Gulf. In Korea, all eight sets are considered mission capable. The U.S. Air Forces, Pacific, has raised concerns, however, about the advancing age of those sets and low funding.

Peacetime Use Is Outpacing Efforts to Rebuild the Bare Base Program

Since the Persian Gulf War, the Air Force has repeatedly used its bare base sets to support numerous contingencies and exercises in that region. The heavy use of these sets during the last few years has outpaced efforts to repair and rebuild the sets. Efforts to restrict use of the bare base assets have been frustrated by continuing activities in the region. As of August 1998, approximately 14 sets were in use at locations throughout the

[2]Military Readiness: Reports to Congress Provide Few Details on Deficiencies and Solutions (GAO/NSIAD-98-68, Mar. 30, 1998).

[3]The Air Force has authorized eight additional Harvest Eagle sets to be stored at Holloman Air Force Base, New Mexico. These sets are intended to be used to support contingencies in the Pacific or elsewhere.

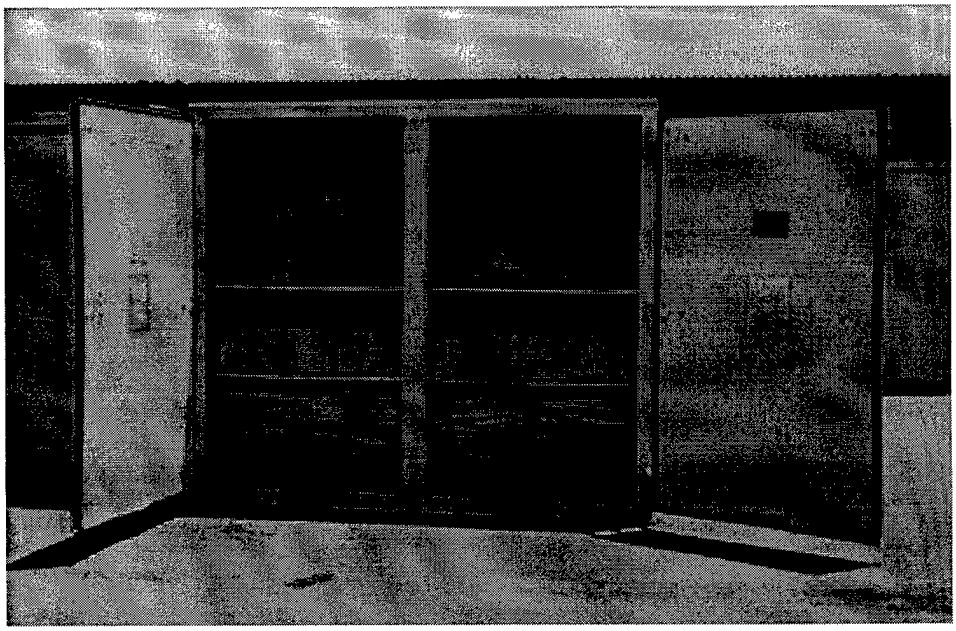
Gulf region. Nine of these sets are in use at Prince Sultan Air Base, where the Air Force relocated its forces following the bombing of Khobar Towers.

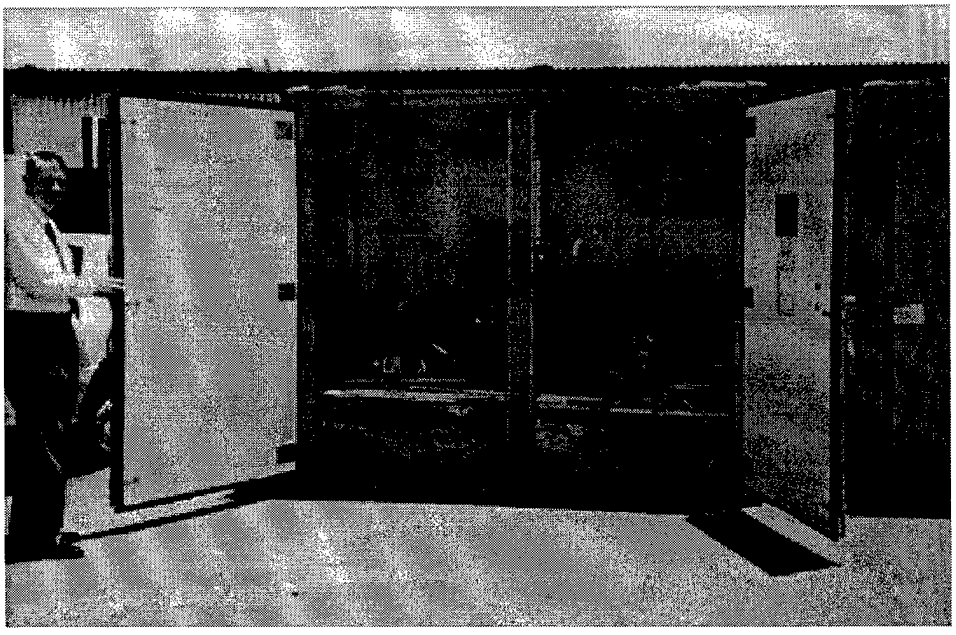
Since the Gulf War, items have been taken from the bare base sets to support a large number of contingencies and exercises. In 1992, bare base equipment was used to support two operations—Joint Endeavor in Bosnia and Provide Comfort in Iraq. In 1996, it was used to support 22 exercises and contingencies, ranging from the Dhahran bombing to Operation Desert Strike. Certain key items, such as tents, generators, and air conditioners, have been used the most and replaced most frequently. For example, between January 1996 and April 1998, more than 3,000 tents and nearly 4,500 air conditioning units—about the number required for 27 and 30 complete housekeeping sets, respectively—were deployed from storage locations in Oman and Bahrain to locations throughout the theater. At Prince Sultan Air Base alone, approximately 3,000 air-conditioning units are currently either in use or have been designated as backup units.

Equipment from these operations has often been returned in poor condition and has required significant repairs, according to program managers. In a recently issued report, the Air Force Inspector General noted that prepositioned equipment was generally treated as a disposable, one-time use commodity, and that user attitudes had often led to equipment abuses.[4] The contractor conducting reconstitution of Air Force equipment in the Gulf region told us that efforts to reconstitute assets and move them into storage to meet prepositioning objectives have been frustrated by the Air Force's continuing heavy use of these assets. Figure 3.1 shows Harvest Falcon equipment before shipment compared to similar containers of equipment returned from a deployment.

[4]Worldwide War Reserve Materiel (WRM), Air Force Inspector General Documented Briefing (PN 97-701, June 8, 1998).

Figure 3.1: Harvest Falcon Equipment Before Shipment Compared to Similar Containers of Equipment Returned From Deployment





Source: GAO

Bare base equipment was originally intended to be used as temporary facilities for short durations; however, much of this equipment has been used repeatedly and for long periods of time. For example, at Prince Sultan Air Base, bare base equipment has been in use for nearly 2 years. In the fall 1998, the Air Force is planning to move its personnel from tents into permanent buildings. According to the contractor responsible for reconstituting the assets at this location, many of the tents will be condemned. During a preliminary inspection in April 1998, they estimated that over 530 tents (about 68 percent) could not be reconstituted due to dry rot and general deterioration.

According to Air Force Instruction 25-101, bare base sets are to be held in reserve for war and used only as a last resort for exercises and contingencies. This instruction encourages Air Force managers to identify and use alternative sources for bare base equipment to help ensure that it will be available should a major contingency arise. The instruction further states that the use of bare base equipment should be severely limited, since extended use reduces life expectancy and these assets need to be available to support operational plans. Concerned about the heavy use and degraded inventories, the Commander in Chief, U.S. Central Command, wrote a February 1997 message urging that the "use of these assets move from an option of first choice for exercises and peacetime operations to an option of last resort." The Vice Chief of Staff of the Air Force issued a similar message in December 1997 stating that "bare base assets should be reserved for major theater wars" and that "alternative sources should be used to meet peacetime requirements."

The Air Force has recently begun to explore the use of commercial sources to support future exercises in the region. In the past, this option was dismissed because it was perceived that using commercial sources would be more expensive and less responsive than using existing bare base assets. In 1997, for example, the Air Force considered using contracted equipment for an exercise called Bright Star. They concluded that it would be much more expensive to use commercial sources than existing bare base equipment. The Air Force calculated that it would cost approximately $1.7 million to use existing bare base equipment compared to approximately $10.5 million to obtain this equipment through a commercial source. The Air Force is currently examining the use of commercial sources to provide support for the next Bright Star exercise, which is scheduled for 2000. No agreement has been reached, but officials are considering several options that would make commercial sources more attractive. These options include purchasing or leasing equipment

such as tents, latrines, and showers that could be reused to support future exercises.

The Air Force Has Not Determined Valid Requirements for the Vehicle Program

The Air Force has not precisely defined requirements for its prepositioned vehicle program. Requirements in the Persian Gulf do not factor in host nation support, and requirements for Europe are based on outdated Cold War plans.

The Air Force recognizes that it needs to refine its requirements for the vehicle program and has been working toward this. By late 1997, the Air Combat Command had determined the gross number of prepositioned vehicles it believes will be needed to support a major war in the Persian Gulf region. This worst-case assessment assumes no host nation support. The Air Force has not yet determined how many vehicles would be available from host nation sources, which will offset the number of vehicles that the Air Force must supply. This is part of the base support planning process. This information would be helpful in determining what vehicle requirements could be met by host nation sources. Like the bare base program, the Air Force needs to consider changes to operational plans and the move toward smaller expeditionary force deployments because these will likely change the number of vehicles required in the prepositioning program.

The Air Force also has not defined requirements for prepositioned vehicles in Europe. The current requirement in Europe is outdated and is based on Cold War plans. As a result, at one location in Europe, the Air Force is storing and maintaining over 900 vehicles that may no longer be needed or that could be used elsewhere in the Air Force. Since no major conflict is envisioned in Europe, Air Force officials do not believe they will need a large number of vehicles there. Air Force officials told us that some vehicles may be needed to augment vehicle stocks elsewhere or to help move personnel, equipment, and supplies through European air bases to potential conflict areas. However, many of these vehicles, especially general purpose vehicles such as trucks and buses, are old and some are obsolete. Figure 3.2 shows vehicles in Europe awaiting disposition decisions.

Figure 3.2: Vehicles Awaiting Disposition Decisions at European Storage Site

Source: GAO.

In recent years, the Air Force has sought in some locations to obtain vehicles from host nation sources or to lease vehicles when possible. In Korea, for example, the U.S. Air Forces, Pacific, is relying heavily on host nation support to provide general purpose vehicles for the prepositioning program. Air Force managers are concerned, however, that leasing vehicles will not solve the problems within the prepositioning program, since even general purpose vehicles may not be readily available in some areas outside of the United States. This is particularly the case in the Persian Gulf, where Air Force managers are concerned that leasing vehicles could be significantly more expensive than purchasing them. Based on experience, some support by host nations is likely. During the Gulf War, allies provided thousands of general purpose vehicles for use by U.S. forces, according to the Air Force.

Air Force Has Little Reliable Data to Measure Vehicle Program Readiness

In addition to our concerns about the requirements underpinning the program, we found that the Air Force has little reliable data with which to measure the readiness of its vehicle program. The Air Force could not tell us precisely how many vehicles it had on hand worldwide or what condition these vehicles were in, and readiness is not routinely reported. In implementing GPRA, the Air Force must have reliable data—like inventory fill and maintenance condition—with which to measure the performance of its prepositioned vehicle program.

In 1996, the Air Force Inspector General reported that the Air Force did not have an accurate accounting of the prepositioned vehicles in the Persian Gulf. In June 1998, officials from the Air Combat Command conducted physical inventories to determine how many and what type of vehicles were actually on hand. One Air Force manager estimated that it might take as much as a year to manually load this information into Air Force systems. Until that time, the Air Force will be unable to accurately assess its inventory levels in the Persian Gulf.

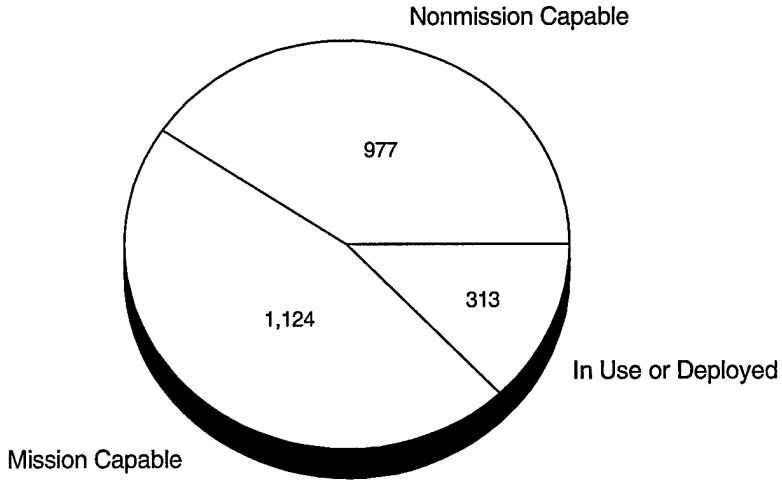
The Air Force could not provide detailed information on the condition of its prepositioned vehicles. Thus, it is difficult to assess readiness comprehensively. However, much of the Air Force's vehicle fleet is aging and in poor condition. In July 1996, the Air Force Inspector General reported that prepositioned vehicles were aging and that a high number of them were not mission capable at some locations.[5] Our examination of vehicles at storage locations we visited indicated that the condition of the vehicles is similar today. During our field visits, we found large numbers of vehicles that were not mission capable. Air Force managers noted that many vehicles are old, have surpassed the end of their projected service life, and are difficult to maintain. Furthermore, Air Force officials told us that vehicles have received a relatively low priority for funding due to a concern that considerable excesses existed throughout the Air Force after the Cold War.

Vehicles Prepositioned in Persian Gulf Region

In the Gulf region, the Air Force's contractor reported that 977 of the 2,414 vehicles (40 percent) at major storage locations in Oman and Bahrain were not mission capable. About 13 percent were in use. (See fig. 3.3.) These figures represent the vehicles managed by the Air Force's contractor in Oman and Bahrain but do not represent all vehicles in the Gulf region.

[5]Functional Management Review: Management of War Reserve Materiel Vehicles and Support Equipment, Air Force Inspector General (PN 96-607, July 29, 1996).

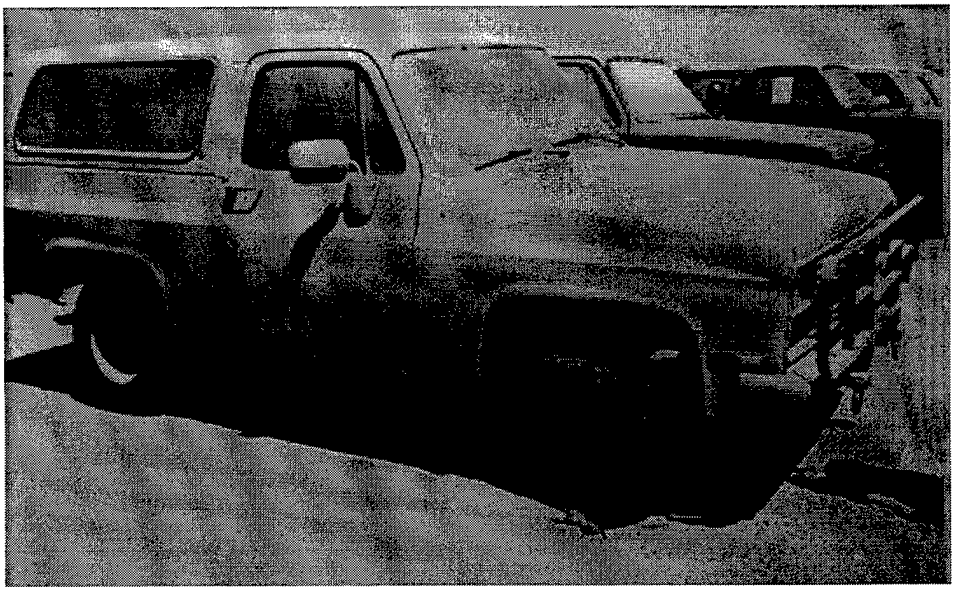
Figure 3.3: Mission-Capability Rates for Prepositioned Vehicles in Oman and Bahrain (as of July 1998)



Source: GAO analysis of contractor data.

The Air Force's largest storage area in the Persian Gulf region is in Thumrait, Oman. At Thumrait, the Air Force stores over 1,700 of the vehicles depicted in figure 3.3. Over 40 percent of these vehicles were not mission capable as of July 1998. Officials estimated that it would take 2 to 3 years to repair the vehicles if there are no further deployments. Most vehicles are stored outside because the site does not have covered storage facilities. This exposes vehicles to the extreme heat and blowing sand of the Omani desert. During our visit, we found numerous vehicles with heat-related damage, including damaged windshields and blown tires. Figure 3.4 shows an example of damage caused by lack of storage facilities combined with extreme desert conditions.

Figure 3.4: Air Force Truck With Exploded Tire, in Storage at Thumrait, Oman



Source: GAO.

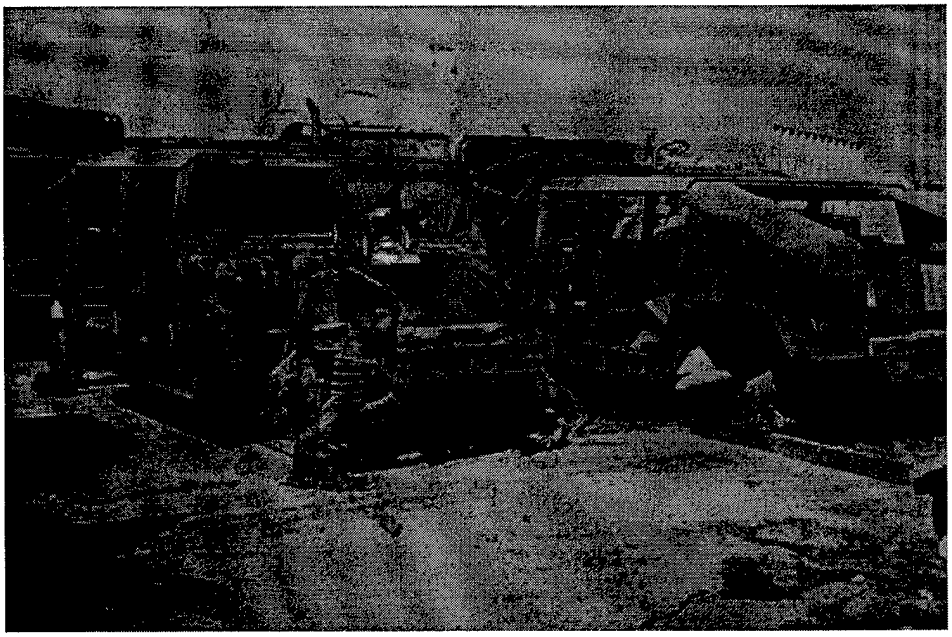
Even if the vehicles were mission capable, the storage site is several hours from the nearest port, and it would likely take weeks to move the vehicles from Thumrait to operating locations throughout the region. This may defeat the basic purpose of the program, which is to locate this equipment where it can be drawn quickly when needed. When vehicles are stored in centralized storage locations like Thumrait and not at the locations where they will be used, a plan for moving the vehicles quickly to their operating locations is needed. The Air Force, however, has not developed plans for moving the vehicles it has in theater to their planned operating locations. Moving these assets to their final operating locations is likely to be chaotic and prolonged, even with a plan, according to Air Force managers. Thumrait is located in a remote area of Oman that presents considerable challenges to moving vehicles to their eventual operating locations. The site is about 4 hours from the nearest port by mountainous roads. During the 3- to 4-month monsoon season, this road can be nearly impassable, and transporting vehicles could take even longer. In the event of a major conflict, quickly moving over 1,700 vehicles from this site would pose a significant challenge and is a concern to Air Force officials.

Vehicles stored in other locations in the Gulf are also in poor condition. In an open storage location near Prince Sultan Air Base in Saudi Arabia, the Air Force has stored about 840 vehicles for several years without conducting maintenance, sheltering them from the elements, or establishing accountability. Many of the vehicles were left at this location in 1995 and are in poor condition, according to Air Force officials. In mid-1998, the Air Force estimated that about 600 of these vehicles could be salvaged. The Air Force is currently working to have these vehicles repaired and moved into storage at other locations in the region. The cost or time required to repair these vehicles has not been fully determined. The remaining vehicles, about 240, are not salvageable and have been, or will be, discarded.

In some cases, maintenance problems have hampered deploying unit operations. For example, a unit that deployed in mid-1997 to an operating location in Bahrain found that 37 of the 130 vehicles (28 percent) they were issued from prepositioned stocks were not mission capable. Some of these vehicles were critical to generating combat sorties, for example, refueling trucks and aircraft towing vehicles, and needed immediate repair before they were used. Problems ranged from damaged tires to bad brakes and other major mechanical defects. These vehicles had been reported as mission capable when issued to the deploying unit. According to the inspection report of the incident, operations were hampered while unit maintenance personnel repaired the vehicles.

Heavy peacetime use of war reserve vehicles to support operations has also contributed to condition problems. According to the Air Force's contractor in the Gulf region, Airwork Vinnell, keeping pace with the constant requests for prepositioned vehicles is extremely difficult. Representatives told us that once they repair vehicles, many of them are shipped elsewhere in the theater to support ongoing operations. They ship vehicles that are in the best working condition, leaving nonmission-capable vehicles behind at the storage locations. This frustrates their efforts to improve mission-capable rates. Also, vehicles that are returned after deployment are often in poor condition and require significant repairs before they can be restored to mission-capable status. Sometimes, vehicles are cannibalized and are returned missing significant parts, like the high-mobility multipurpose wheeled vehicles shown in figure 3.5. During a recent review of the prepositioning storage sites, Air Force vehicle managers noted that some vehicles had been returned to the storage locations in unrepairable condition.

Figure 3.5: High-Mobility, Multipurpose Wheeled Vehicles Returned From Bright Star Exercise to Thumrait, Oman



Source: Airwork Vinnell.

Vehicles Prepositioned in Pacific and European Regions

In the Pacific, the Air Force reports that it has over 2,500 vehicles prepositioned. Officials from the U.S. Air Forces, Pacific, told us that their vehicle program had experienced significant maintenance problems during the early 1990s but was improving due to concerted efforts throughout the theater. Vehicle storage and maintenance problems currently exist in some locations in the Pacific. Air Force officials reviewed operations at each base in the Pacific region in November 1997 and in a report of this visit cited improvements but also significant storage and maintenance problems at some locations. For example, at Osan Air Base, Korea, problems with the 350-vehicle fleet included (1) delayed maintenance on some vehicles due to lack of orders to initiate the work, (2) improper storage practices and unreported damage, and (3) heavy use of the prepositioned vehicles to augment the peacetime fleet at this location. The report also raised vehicle maintenance as a problem area at Kunsan Air Base, Korea. During our review, no maintenance contract had been secured for the site, and the lack of local, trained mechanics as well as extensive peacetime use of these vehicles were noted as negatively

affecting the program. A contractor is scheduled to begin maintenance at this site starting in October 1998, according to the Air Force.

In Europe, the Air Force has stored most of its war reserve vehicles at a warehouse facility in Sanem, Luxembourg. This location holds the majority of the vehicles stored in Europe and provides humidity-controlled storage. According to Air Force officials at the site, many of these vehicles were brought to Sanem from other locations in Europe. Many are in poor condition or had not been inspected when they arrived. As of July 1998, 523 (56 percent) of the 926 vehicles stored at this location were not mission capable or had not been inspected.

Air Force Recognizes Need to Develop Prepositioning Strategy and Improve Inventory Reporting

Our guidance for implementing GPRA provides a framework for moving toward a results-oriented organization. The first step is to determine what an agency's programs are intended to accomplish. For the Air Force's prepositioning programs, this would address the strategy and requirements concerns. The second step is to measure performance, which for the Air Force would require sound data on its inventories and maintenance conditions. Only after the Air Force has taken these fundamental steps can it move on to the third step in implementing GPRA—using performance information to improve the program.

In September 1997, the Air Force tasked its Logistics Management Agency to assess its prepositioning programs. This study resulted from Air Force concerns that its strategy governing its prepositioning program had not been implemented as well as concerns over the visibility of its inventory. Officials cited long-standing problems in the prepositioning program, and one program manager indicated that concerns about the Air Force's prepositioning program had been raised as early as 1993. The Air Force formed a working group of senior program managers to conduct the study; the results were not available when we concluded our work. Air Force officials admitted that it will likely take several years to address the many issues facing the programs.

Conclusions and Recommendations

Conclusions

To operate and maintain the services' prepositioning programs, DOD is making a significant annual investment—more than $1 billion. Despite this investment, these programs are not being managed efficiently. The Army and the Air Force have not validated requirements for these programs and determined what they need to support DOD's strategy to fight and win conflicts in Korea and the Persian Gulf. Valid requirements that reflect this strategy should be the foundation of the programs, and such requirements are imperative for DOD to objectively assess the programs. As suggested, the first step for any agency is to determine what it is trying to accomplish and its desired outcomes.

Even if the Army and the Air Force had valid requirements, they could not assess the on-hand inventories of prepositioned materiel or its condition because the two services have little reliable data for some programs. Without such data, they cannot measure performance of these programs. Such measurement requires complete, accurate, and consistent data. While the Army and the Air Force report readiness on brigade sets and bare base sets, reporting on their operational projects, sustainment, and vehicle programs is limited and unreliable.

Today, these combined requirements and inventory reporting problems prevent us—and DOD—from comprehensively assessing the readiness of prepositioned stocks. This is a problem because the military envisions heavy reliance on prepositioned stocks in future conflicts. Service claims that the programs are underfunded or that shortfalls affect war-fighting ability are difficult to validate. Only after fundamental requirements and reporting problems are addressed can DOD begin to reliably assess the performance of the programs. Then it can move to the third and final step in implementing GPRA—using performance information to improve organizational processes, identify gaps, and set improvement goals.

The services, Joint Staff, and DOD recognize the concerns raised in this report. The update to the mobility requirements study planned to begin in 1999 provides an excellent opportunity for the services and other stakeholders to work together to determine the future of these programs.

Recommendations

We recommend that the Secretary of Defense direct the Secretaries of the Army and the Air Force to reassess their prepositioning programs with the goal of establishing sound requirements based on the two-war strategy and develop reliable inventory information to measure the readiness of all

programs. Specifically, we recommend that the Secretary of Defense direct the Secretary of the Army to

- reevaluate the requirements for European prepositioning, including whether the current brigade set configurations best meet the envisioned missions;
- take steps to ensure that the operational projects requirements meet operational needs and are prioritized in accordance with DOD's current wartime strategy;
- complete ongoing efforts to improve the processes used to determine sustainment requirements and work with other DOD stakeholders to determine what stocks will be available from the industrial base and host nations;
- develop reliable reports of inventory fill and maintenance conditions for the operational projects and sustainment programs so that their readiness can be reliably measured; and
- dispose of unneeded stocks.

We recommend that the Secretary of Defense direct the Secretary of the Air Force to

- determine current requirements for European prepositioning;
- develop precise bare base requirements by assessing the infrastructure available in the Persian Gulf region;
- complete efforts to determine worldwide vehicle requirements, considering what is or will be available from the host nations;
- develop reliable reports of inventory levels and maintenance conditions for the vehicle program so that its readiness can be reliably measured;
- maintain needed prepositioned vehicles in good condition; and
- dispose of unneeded stocks.

Matter for Congressional Consideration

To reliably assess DOD's readiness status and evaluate its future budget requests, the Congress may wish to consider having the Secretary of Defense periodically report on (1) the progress by DOD, the Army, and the Air Force to address the recommendations made in this report and (2) the impact of any shortages that remain after requirements and reporting problems are addressed, including how DOD and the services would mitigate shortages in the event of a major conflict.

Agency Comments

In commenting on a draft of this report, DOD concurred with the report's recommendations and agreed that Army and Air Force prepositioning programs need to be reviewed with an emphasis on validating requirements based on a two-war strategy, streamlining maintenance, and improving readiness. DOD stated that the Joint Staff and the respective services are examining many of the issues raised in this report. Specifically, the Army is (1) reviewing its prepositioning requirements for Europe to assess whether, in light of projected missions, European stocks should be configured in brigade sets; (2) refining its sustainment requirements with the intent of redistributing or disposing of any excess war reserve stocks; and (3) resolving data accuracy problems for its operational project and sustainment programs to assist in management and readiness assessments.

DOD said that the Air Force plans to complete its ongoing war reserve materiel study within a year. This study is expected to verify and validate European prepositioning requirements, develop base support plans for Southwest Asia, and address vehicle requirements determination problems. DOD also said that the Air Force would redistribute or dispose of any excess vehicles identified through its reassessment of this program.

DOD did not agree with our observation that the Air Force has not updated its bare base requirements since the late 1980s. The Air Force indicated that it has reviewed this requirement biennially in conjunction with its updating of commanders-in-chief operational plans. However, the Air Force was unable to produce documentation to show it had conducted any rigorous, methodologically sound, reviews of its Persian Gulf bare base requirements. We found that the bare base requirements established in the late 1980s far exceeded the number of Air Force troops that were actually housed in bare base sets during the Persian Gulf War. Also, despite the fact that Iraq's military is substantially smaller than it was during the Persian Gulf War, the Air Force's bare base requirements have remained substantially unchanged since the late 1980s. In addition, base support plans that would identify available infrastructure within the region have not yet been completed.

DOD's comments appear in their entirety in appendix II. DOD also provided technical comments, which we have incorporated as appropriate.

Marine Corps and Navy Prepositioning Programs

The Marine Corps relies heavily on prepositioned equipment, while the Navy has a relatively small program, since it tends to deploy with most needed equipment on its ships. Programs include (1) the 13-ship Maritime Prepositioning Force; (2) a brigade of equipment in Norway; and (3) other items, including hospitals, ordnance, and a small amount of other materiel. According to the Navy and Marine Corps, the annual budget for operating and maintaining the Maritime Prepositioning Force, Norway brigade set, and hospital programs in fiscal year 1997 was approximately $463.6 million. About $441.8 million of this amount was for operating and maintaining the Maritime Prepositioning Force.

Maritime Prepositioning Force

The top priority in the Marine Corps and the Navy prepositioning programs is the Maritime Prepositioning Force. This force consists of equipment and supplies prepositioned on a fleet of 13 prepositioning ships. The fleet is organized into three squadrons kept afloat near Guam and Diego Garcia and in the Mediterranean. Each squadron is designed to support and sustain 17,300 marines and 2,100 naval personnel for 30 days. The equipment and supplies in each squadron mirrors the others. Each squadron is designated for use by expeditionary forces that will deploy from the United States to meet the equipment in a conflict area. According to the Marine Corps, these ships carry much of what the expeditionary forces need for initial operations, including tanks, personnel carriers, ammunition, food, fuel, and spare parts, among other items. The force also contains Navy equipment, including construction equipment and crafts used for off-loading and ferrying equipment and supplies ashore, among other items.

The force is being expanded by adding two ships to the fleet. The extra space afforded by the expansion will allow the Marines to add or augment existing capability, in two of its squadrons. Additions to each squadron will include an expeditionary airfield, a fleet hospital, and heavy engineering and construction equipment. The Marines intend to use converted commercial ships for the expansion. The two ships have been acquired and are being converted. The Marines expect to load the first of the two ships by September 1999. The other ship is scheduled to be added to the force by 2001. The Marine Corps originally planned to add a third ship. However, cost escalation on the second conversion ship necessitated canceling the request for proposal on the third ship. As of October 1998, the Marine Corps had not decided whether it would seek additional funding for the third ship.

The Marines are concerned about the growing airlift required to deploy the force. The Marines originally estimated that it would require about 250 airlift sorties (C-141 equivalents) to move the troops and additional equipment needed to employ the expeditionary forces associated with each Maritime Prepositioning Force squadron. In our discussions, however, officials from Marine Corps Headquarters and the U.S. Central Command told us that the actual number today is probably higher—perhaps as many as 350 airlift sorties. This presents a burden on airlift and could affect the Marines' ability to deploy the full force. In September 1998, the Marines began to better tailor the equipment aboard the ships to meet unit needs and decrease the airlift requirement, according to a Marine Corps official.

The Maritime Prepositioning Force—operational since 1984—has been given high marks for management by service auditors. In December 1996, the DOD Inspector General reported that Marine Corps systems provide reliable inventory data and that equipment afloat is maintained at high readiness levels.[1] In April 1998, the Marine Corps reported that inventory fill and mission-capability rates were near 100 percent. The Marines have begun to look at concepts for the next generation of prepositioned ships under a program called Maritime Prepositioning Force-2010 and Beyond. The concept envisions elimination of the current requirement for access to secure ports and airfields for assembly of the force. The next-generation force is envisioned to be assembled with its equipment at sea and then delivered ashore as a combat-capable force.

Norway Air-Landed Marine Expeditionary Brigade

The Norway Air-Landed Marine Expeditionary Brigade was established in the 1980s to rapidly reinforce the North Atlantic Treaty Organization's northern flank. This program contains support equipment and ammunition for about 13,000 Marines. Stocks are kept in underground, climate-controlled warehouses in central Norway. In recent years, Congress, the DOD Inspector General, and others have questioned the value of the brigade in the post-Cold War world. However, the Center for Naval Analyses reported in early 1996 that, given the relatively low total economic costs associated with the program, there was no compelling economic reason to remove the prepositioned stocks from Norway.[2] Under an arrangement between the United States and Norway signed in 1995, the two countries agreed to split the costs of the program. For fiscal

[1]Equipment Pre-positioned Afloat, Department of Defense Inspector General (97-054, Dec. 20, 1996).

[2]Retention of the Norway Airlanded Marine Expeditionary Brigade, Center for Naval Analyses (Quick Response Report No. CQR 96-4, Mar. 1996).

year 1997, the U.S. operations and maintenance costs of the brigade totaled $3.1 million.

Other Prepositioned Stocks

The Fleet Hospital program was designed to provide deployable medical care capability for Navy and Marine Corps forces. As currently designed, the program is authorized ten 500-bed, modular hospitals that include rapidly erectable medical and surgical facilities. The Navy prepositions eight of these hospitals outside the United States, with seven positioned ashore and one afloat. The other two hospitals are kept in the United States undergoing refurbishment and are routinely exchanged for the prepositioned hospitals. Ashore hospitals are prepositioned in Guam (1), Japan (3), Korea (1), and Norway (2). The Navy is planning to transfer three of these hospitals to the expanded Maritime Prepositioning Force. The Navy plans to identify two hospitals currently prepositioned overseas and reallocate them and the currently afloat assets to the enhanced Maritime Prepositioning Force ships. The operations and maintenance costs of the fleet hospital program during fiscal year 1997 totaled about $18.7 million.

Most of the Navy's reserves of ordnance are carried aboard deploying battle groups. Since these stocks are part of normal Navy operations, we did not consider this ordnance to be part of a prepositioning program. Other Navy stocks include ordnance located at several locations worldwide, including in or near Spain, Iceland, Norway, Italy, Greece, Korea, Japan, Guam, and Diego Garcia. In addition, the Navy has small amounts of other materiel that it prepositions ashore outside the United States. For example, fire-fighting equipment to augment shipboard materiel in the event of major fires afloat is positioned at the Naval Air Station in Sigonella, Italy.

Comments From the Department of Defense

PROGRAM ANALYSIS AND EVALUATION

OFFICE OF THE SECRETARY OF DEFENSE
1800 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-1800

October 29, 1998

Mr. Mark E. Gebicke
Director, Military Operations and Capabilities Issues
National Security and International Affairs Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Gebicke:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "MILITARY PREPOSITIONING: Army and Air Force Programs Need To Be Reassessed," dated September 24, 1998 (GAO Code 703218/OSD Case 1697).

The Department generally concurs with the report. DoD strongly supports a robust prepositioning program and the flexibility such a program provides for responding to global crises. Prepositioned equipment and supplies dramatically reduce both the time required to deploy forces and the number of airlift sorties needed to move them. As a result, the warfighting CINCs are provided with an operational advantage for responding to regional threats and conducting other contingency operations.

DoD agrees that the Army's and Air Force's prepositioning programs need to be reviewed, with an emphasis on validating requirements, streamlining maintenance, and improving readiness. The Joint Staff and the respective Services are currently examining many of the issues raised by the GAO. As part of this effort, both the Army and the Air Force are conducting independent studies to assess their prepositioning requirements.

The Department does not agree with the report's assertion that the Air Force has not updated its bare base requirements since the late 1980s. In fact, the Air Force reviews and modifies these requirements biennially, in conjunction with updates of the CINC OPLANs.

The Department appreciates the opportunity to review the draft GAO report. Detailed comments on the report's recommendations are enclosed. Technical comments were provided separately to the GAO staff.

Sincerely,

Robert R. Soule
Director

Enclosure

GAO DRAFT REPORT DATED SEPTEMBER 24, 1998
(GAO CODE 703218) OSD CASE 1697

"MILITARY PREPOSITIONING: ARMY AND AIR FORCE PROGRAMS NEED TO BE REASSESSED"

DEPARTMENT OF DEFENSE COMMENTS TO
THE GAO RECOMMENDATIONS AND
MATTER FOR CONGRESSIONAL CONSIDERATION

Now on pp. 8 and 58.

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense direct the Secretaries of the Army and Air Force to reassess their prepositioning programs with the goal of establishing sound requirements based on the two-war strategy and develop reliable inventory information to measure the readiness of all programs. (p. 9, p.66/GAO Draft Report)

DOD RESPONSE: Concur. The Department agrees that the Army and Air Force need to reassess their prepositioning programs based on a two major theater war (MTW) strategy. The Army is reviewing the requirements for their Europe-based prepositioned equipment to determine whether this equipment is needed to support a two MTW strategy. The Air Force is completing a study to develop a worldwide prepositioning strategy, improve the requirements determination process, and improve visibility of war reserve material assets.

Now on pp. 8 and 59.

RECOMMENDATION 2: The GAO specifically recommended that the Secretary of Defense direct the Secretary of the Army to:

- reevaluate the requirements for European prepositioning, including whether the current brigade set configurations best meet the envisioned missions;
- take steps to ensure that the operational projects requirements meet operational needs and are prioritized in accordance with DoD's current wartime strategy;
- complete ongoing efforts to improve the processes used to determine sustainment requirements, and work with other DoD stakeholders to determine what stocks will be available from the industrial base and host nations;
- develop reliable reports of inventory fill and maintenance condition for the operational projects and sustainment programs so that their readiness levels can be reliably measured; and
- dispose of unneeded stocks. (p. 66/GAO Draft Report)

DOD RESPONSE: Concur. The Army should complete the recommended actions. Currently, the Army is reviewing requirements for prepositioned sets in Europe and plans to assess unit set configuration in light of projected missions. The Army periodically reviews operational project requirements, although the Army could improve its process to array operational projects in accordance with mission priorities. War reserve sustainment requirements for both major and secondary items are being refined by the Army to include a review of industrial base contributions. In addition, the Army plans to review potential host nation contributions to war reserve stocks. Any stocks identified as excess as a result of these actions,will be redistributed or disposed of as necessary. For operational projects and sustainment programs, the Army is resolving data accuracy problems for asset and maintenance information to assist in management and readiness assessments.

RECOMMENDATION 3: The GAO specifically recommended that the Secretary of Defense direct the Secretary of the Air Force to:

- determine current requirements for European prepositioning;
- develop precise bare base requirements by assessing the infrastructure available in the Persian Gulf region;
- complete efforts to determine worldwide vehicle requirements, considering what is or will be available from the host nations;
- develop reliable reports of inventory levels and maintenance condition for the vehicle program so that its readiness can be reliably measured;
- maintain needed prepositioned vehicles in good condition; and
- dispose of unneeded stocks. (p. 67/GAO Draft Report)

Now on pp. 8 and 59.

DOD RESPONSE: Concur. The Air Force should complete the recommended actions. The Air Force is expected to complete their war reserve materiel (WRM) study within a year. The study has already identified excess WRM in Europe that can be used to fill prepositioning requirements in the Pacific and Southwest Asia. The study will: (1) verify and validate European prepositioning requirements; (2) develop base support plans (BSP) for Southwest Asia (SWA) which should improve the bare base requirements computation process; and (3) address vehicle requirements determination problems. Worldwide vehicle requirements for the Air Force have already been reduced. However, the Department recognizes that the Air Force needs to make additional efforts to validate vehicle requirements, report maintenance conditions, and ensure a high standard of readiness. As a result of this process, any vehicles identified as excess will be used to fill other CINC requirements or turned-in for disposition.

Now on pp. 9 and 59.

MATTER FOR CONGRESSIONAL CONSIDERATION: To reliably assess DoD's readiness status and evaluate its future budget requests, the GAO suggested the Congress consider having the Secretary of Defense periodically report on (1) the progress by DoD, the Army, and the Air Force to address the recommendations made in this report and (2) the impact of any shortages that remain after requirements and reporting problems are addressed, including how DoD and the Services would mitigate shortages in the event of a major conflict. (p. 9, p. 67/GAO Draft Report)

DOD RESPONSE: Generally concur. The Department will continue to report the status of prepositioning programs through the Secretary's Annual Defense Report to the President and Congress (ADR).

Major Contributors to This Report

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Products Related to Prepositioning Issues

GAO Products

Afloat Prepositioning: Not All Equipment Meets the Army's Readiness Goal (GAO/NSIAD-97-169, July 23, 1997).

Army War Reserves: DOD Could Save Millions By Aligning Resources With the Reduced European Mission (GAO/NSIAD-97-158, July 11, 1997).

Strategic Mobility: Late Deliveries of Large Medium Speed Roll-On/Roll-Off Ships (GAO/NSIAD-97-150, June 16, 1997).

War Reserve Materiel (GAO/NSIAD-94-196R).

Other Products

Army Prepositioned Stock Program: Combat Equipment Group - Europe, U. S. Army Audit Agency (AA98-138, Mar. 31,1998).

Army War Reserve Secondary Items, Coopers & Lybrand L.L.P. (Briefing Report Prepared for the Office of the Secretary of Defense, Mar. 31, 1998, and June 11, 1998).

Sustainment Requirements for the Army Prepositioned Stock Program, U.S. Army Audit Agency (AA 98-99, Feb.23, 1998).

IDA Review of the Army War Reserve Program, Institute for Defense Analyses (IDA Paper P-3310, Apr. 1997).

Moving U. S. Forces: Options for Strategic Mobility, Congressional Budget Office (Feb. 1997).

Equipment Pre-positioned Afloat, Department of Defense Inspector General (Report No. 97-054, Dec. 20, 1996).

Functional Management Review: Management of War Reserve Materiel Vehicles and Support Equipment, Air Force Inspector General (Report No. PN 96-607, July 29, 1996).

Retention of the Norway Airlanded Marine Expeditionary Brigade, Center for Naval Analyses (CQR 96-4, Mar. 1996).

Assessment of Army War Reserve Materiel, Department of the Army, Inspector General (Oct. 25, 1995).

Army and Marine Corps Prepositioning Programs: Size and Responsiveness Issues, RAND (PM-378-CRMAF, Apr. 1995).

Navy Fleet Hospital Program, Naval Audit Service Audit Report (NAVAUDSVC P-7520.1, 059-W-94, July 1994).

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